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# ORIGINAL ARTICLES

## REGURGITANT VOMITING DUE TO UNUSUAL ADHESIONS FOLLOWING GASTRO-ENTEROSTOMY WITH PYLORIC EXCLUSION.*

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By "regurgitant vomiting" is understood the passage of the content of the efferent loop of bowel into the stomach after gastro-enterostomy, in contradistinction to "vicious circle," which indicates a similar process with the escape from the afferent loop. Most writers object to this distinction on the basis that a differentiation cannot be made in a great majority of cases even after the abdomen is open. In the case to be reported such a differentiation is possible.

The writer sees no objection, however, to the use of either the terms "regurgitant vomiting" or "vicious circle" to include all cases of persistent vomiting following gastro-enterostomy, if the derivation of the terms does not convey an explanation of the mechanics of the vomiting.

The literature of the past few years contains few recorded cases of vicious circle and the very recent text books regard its presence as an indication of faulty technique. While the general adoption of the posterior no-loop gastro-enterostomy has tended to reduce to a remarkable degree the cases of persistent vomiting after operation, nevertheless from time to time such cases will occur where the technique is not entirely at fault, but secondary complications, especially adhesions bring about this unfortunate state.

No one etiological factor for regurgitant vomiting exists. A review

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of the reported cases and a study of the improved technique, developed entirely from clinical indications, will readily demonstrate this.

The original operation of anterior gastro-enterostomy was the condition par excellence for the development of this complication. The afferent loop which is of necessity very long, becomes water-logged. Whether the mere presence of a long loop without a kinking or spur formation at the new stoma, is sufficient to produce this condition is very doubtful. The combination of the two processes is usually present.

In the posterior gastro-enterostomy with a long loop, the same causes and mechanics of the vomiting exist. According to Deaver, these long loop cases vomit several hours after eating. The stomach partially empties itself into the duodenum, its further movements being prevented by the normal reflex from the distended afferent loop. This permits the digestion and absorption in great part from the duodenum and jejunum with the possible escape of some of the content into the efferent loop. When the proximal loop empties, the stomach movements return and the surplus of bile and pancreatic juice which has entered it from the duodenum, as well as the residue of food, if any remained, is now rejected by vomiting. Deaver thinks the great length of the loop would explain the fact that so many of these cases of regurgitant vomiting do not suffer great loss of weight.

Antiperistalsis with escape of the duodenal content through the pylorus into the stomach,—the general acceptance of which mechanism is responsible for the term "vicious circle,"—has not been demonstrated. Cannon in a large series of experiments on animals found that the content of the duodenum always entered the stomach through the new gastro-enterostomy opening. Cases in which exclusion of the pylorus at secondary operation had failed to relieve the vomiting, would seem to verify these findings.

Since Wölfler's operation in 1881, the various modifications of the gastro-enterostomy such as pyloric exclusion, entero-enterostomy combined with closure of the afferent loop, Roux's operation and many others, have all had as their aim the change of the direction of the current from the stomach to the efferent loop of bowel.

When Von Hacker's posterior gastro-enterostomy was first employed, in addition to the disadvantages of the long loop, complications such as hernia through the opening in the mesocolon and occasional contraction of the mesocolon, causing constriction of the loop of bowel at the point of anastomosis, were encountered.

The final and seemingly permanent adoption of the posterior no-loop operation does away with all the complications which have been previously mentioned. Careful technique will prevent the kinking and spur formation at the new stoma, making unnecessary the suturing of the afferent and efferent loop to the stomach, as recommended by some. Careful suture of the mesocolon will prevent the hernia and obstruction.

There is no proof that the direction of the line of anastomosis has

any effect in either the prevention or production of regurgitant vomiting. Experiments have not shown that opposite peristalsis of the stomach and jejunum alone will produce this complication.

Closure of the gastro-enterostomy opening in cases in which the pylorus is obstructed or excluded is a cause of persistent vomiting. This is due to faulty technique, following the use of the button or faulty mucous membrane suture. A large number of button gastro-enterostomies and some few suture operations are reported in which the gastro-enterostomy opening closed, but I have been unable to find a single case recorded in which the opening closed where a pyloric exclusion was done at the same time. Mayo claims that if permanent obstruction at the pylorus exists, no marked contraction of a properly formed gastro-enterostomy need be feared. In the case to be reported, the button gastro-enterostomy closed completely with gradual starvation of the patient, even though the pylorus had been excluded at the first operation.

Martin has very recently reported an interesting case in which two gastro-enterostomies were performed with buttons, the one closing in three years and the second in five and finally requiring a Roux operation. In the discussion of this case Gibson advised against the use of the button in these cases with a simple pyloric stenosis, but would use it in the cases of pyloric exclusion or resection.

Kelling regards the large size of the gastro-enterostomy opening as an etiological factor in some cases. The presence of the large opening according to him, permits a spur formation by the mesenteric border of the jejunum entering the stomach opening. Cannon and Blake describe a similar result due to an overdistention of the stomach.

The attempt to explain regurgitant vomiting entirely on physiological grounds has failed. Boldireff has proved conclusively that the mere presence of bile and pancreatic juice in the stomach is not sufficient to produce vomiting. He attached the gall bladder to the stomach so that the bile could drain freely into the stomach without causing vomiting. Kaiser and others have demonstrated the normal presence of bile in the stomach after gastro-enterostomy. Moynihan has had one such case in a man in whom as a result of a duodenal trauma, all the duodenal secretion entered the stomach. There was no vomiting.

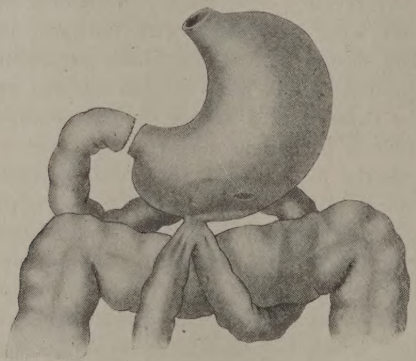
In the report of the case which follows, the cause of the regurgitant vomiting will be found due entirely to adhesions. The jejunum about ten to twelve inches from the gastro-enterostomy opening on the distal loop, became adherent to the anterior wall of the stomach, producing a long loop just as in an anterior gastro-enterostomy, except that the loop was distal to the enterostomy opening.

Mr. B., age 48 years, has for the past ten years suffered from pain in the epigastrium, otherwise both his personal and family history are negative. His present trouble began in July, 1907, with constipation and severe pain in the region of the stomach. He was suddenly awakened one night by a desire to vomit. The vomitus contained a large quantity

of blood, both fluid and clotted. Since this time he has been having pain after eating, frequently immediately after taking food, more often three or four hours after meals. The pain was at times relieved by eating. He often vomited at night. Distress, fullness and eructation of gas were often present. At no time did the physical examination reveal more than an exquisite sensitiveness in the epigastric region to the right of the median line.

A diagnosis of gastric ulcer was made in October. At this time the pain was very severe, the patient being unable to take even a glass of milk without great distress. No blood was found in the vomitus at this time. An examination of the feces on several occasions gave a positive blood reaction.

Repeated stomach analysis failed to reveal a marked retention. The amount of content after an ordinary Ewald test breakfast varied from



Showing adhesions of jejunum to stomach.

three to five ounces. On one occasion a small amount of fat was found, taken on the previous day. There was not a high degree of superacidity. Free hydrochloric acid varying from 57 to 78. Total acidity varying from 75 to 90.

An ulcer cure was advised and carried out for three weeks without any appreciable benefit. In December a second and more rigid cure was carried out for five weeks. The patient was benefited by this cure, but was not entirely free of symptoms. From March to the latter part of August, a period of more than eight months, the condition of the patient was very satisfactory. At this time the old symptoms returned. On September the second, when the patient was again seen, he showed marked emaciation. He had been vomiting for several days and black particles were present in the vomitus. On the same night, he vomited a large amount of blood as also the following morning.

The patient entered the Jewish Hospital and was operated on October the sixth. A large pyloric ulcer was found. In that no obstructive

symptoms were present, the pylorus was excluded from the duodenum and a posterior no-loop button gastro-enterostomy was done by another surgeon. The patient was up in a chair on the eleventh day. The button was passed on the thirteenth day. On the fifteenth day, the patient began to complain of sour stomach and he vomited eight ounces. On the following day a pint of fluid and undigested food was vomited. Lavage was now employed daily, otherwise the patient vomited large quantities. The vomitus and lavage was never bile stained, but contained undigested food only. The urine and stools were very scant and the patient lost a great deal of weight. Temperature and pulse were normal. A diagnosis of closure of the gastro-enterostomy opening with gradual starvation was made.

On November the nineteenth, about six weeks after the first operation, I saw the patient in consultation. The following morning I operated. The abdomen was entered through the old incision. Very firm and abundant adhesions were encountered. The old gastro-enterostomy opening had closed completely. With great difficulty, owing to the adhesions and anatomical changes from the previous operation, a suture posterior no-loop gastro-enterostomy was done. The opening was made in both the stomach and jejunum as close to the old opening as possible. The patient made a very satisfactory operative recovery. He did not vomit once after the operation until the twelfth day. He then vomited bile stained fluid, but no undigested food. Up to this time the patient had been taking an average of fifty ounces of liquid nourishment every twenty-four hours and had been sitting up since the ninth day. After the twelfth day he vomited large quantities of bile stained fluid, unless releived by lavage.

On December the twelfth, I reoperated, again entering the abdomen through the old incision. The adhesions were more pronounced than at the previous operation. A loop of jejunum about ten or twelve inches distal to the gastro-enterostomy opening, was found adherent to the anterior wall of the stomach, being thrown up over the transverse colon as in an anterior gastro-enterostomy. This adhesion was so firm that it was at first thought to be one of the gastro-enterostomy openings. While this was recognized as the probable cause of the vomiting, to be safe, a button entero-enterostomy was done with difficulty, in that the proximal loop of bowel was very short.

The patient vomited twice within the first twenty-four hours after operation. Since this time he has not vomited. He took nourishment within the first twelve hours after operation, and by the twelfth day he was receiving a very liberal diet. He left the hospital on December the thirty-first weighing 121 pounds. His normal weight was 175 pounds. The patient has been seen by me frequently since the operation. He feels well and is free of all symptoms. When seen on May 6th, he weighed 180 pounds, a gain of sixty pounds in four months.

This case serves to demonstrate two very important factors in

stomach surgery. First that the use of the Murphy button is not always safe, even in those cases in which the pylorus has been excluded. I have, within the past ten days, seen another case of closure of the button gastro-enterostomy reoperated by another surgeon. The closure occurred just one year after the primary operation, at which time the pylorus was also excluded. Up to this time the closure of the new stoma in such cases has been regarded as practically impossible. It is surprising that no cases have been reported of closure after pyloric resection for carcinoma with a button gastro-enterostomy, which was at one time so generally done and is even to-day the method employed by many. This may possibly be explained by the small number of cases in which life is greatly prolonged or a permanent cure obtained.

Secondly the case demonstrates how varied the causes of regurgitant vomiting really are, making the treatment of this condition entirely dependent upon the findings in the individual case. In the one case the simple freeing of adhesions is sufficient, while in others an entero-enterostomy with a closure of the afferent loop may be necessary or a Roux's operation may offer the surest way of turning the current in the normal direction.

# CORNEAL ULCERS AND THEIR TREATMENT.*

By SAMUEL G. KELLY, M. D., Sedalia, Mo.

Corneal ulcers need no introduction. Like the poor, we have them with us always. As opthalmologists we may fear them, and as men we may dread to think of their havoc. As the brain controls the body, so does the cornea control our light and sight. When we consider that about twenty-eight per cent. of all blindness is due to corneal opacities in one form or another, we must admit that this portion of the optic tract requires our careful and earnest consideration. And yet, as a literary topic, it seems as though all have thought "nuff said" and let it go at that. Let us again emphasize the gravity of these cases. We all have a large number of them to deal with, and while the majority are minor in degree, yet a great many are disastrous to sight, and some even to life itself, and from me they demand a very respectful attitude. How a small abrasion can cause so much trouble is scarcely preceptible, yet a small lesion in no other part of the human anatomy can be so disastrous. The cornea is an excellent culture media after the shell is once broken, as it were, and nature seems to be at fault in not being able to better cope with corneal infection, and still more at fault in not being able to replace itself with normal tissue. A corneal ulcer results from the infiltration stage failing to terminate in absorption, thereby causing a destruction of overlying corneal tissue.

As to the etiological classification, we may say ulcers result from trauma, infection following; or from softening of the corneal epithelium due to some systemic disorder. So far as is known corneal ulcers are exogenous. Trauma, the chief etiological factor, may result from stab wounds, blows, foreign bodies in the eye, burns and some irritation from the lids or misplaced cilia. Systemic disorders may be syphilis, tuberculosis, scrofula, anemia, paralysis of the ophthalmic division of the fifth nerve, conical cornea, goitre and lagophthalmos. As to bacterial infection, we may have several germs participating or we may have a single infection. The eye is never sterile. We may find the germ present in corneal ulcers to be the ordinary pus cocci, the colon bacillus, the pneumococcus, the gonococcus or, in rare sloughing ulcers, we may find one of the fungus growth. These ulcers are no respecters of persons. They are found in all classes and all ages. True, we find them more among the poor and slovenly people, and mostly in adults. The same class of ulcers may be entirely different on account of the characteristics of the patient. In cities, the virulence of an ulcer is usually much exaggerated in the slums over patients in more hygienic surroundings; in fact, some of

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my worst cases have been among the slovenly people, who persist in getting the dressings off between treatments; these people are poorly nourished as a class, which of course reduces their resisting powers; also among the poorer class the liability of corneal abrasion is greater and infection more frequent. Children rarely have corneal ulcers, except those following interstitial keratitis and some conditions which will be described later.

In classifying ulcers I want to consider more particularly the important forms of ulcers; also I desire to lay stress only on the forms we meet each day. I will consider the pathology under each class in a general way; also the symptomotolgy.

First: Simple ulcers are by far the most common and easily treated and leave no bad after effects. They result from foreign bodies in the eye and from lid and cilia irritation. As a rule they heal without opacity and are of short duration.

Second: Round ulcers are the sequelæ of more severe forms of conjunctivitis, trachoma, and injuries to the cornea which have passed beyond the stage of simple ulcer. Bowman's membrane is usually affected and so usually leaves opacity. They present a clear bottom and are surrounded by an infiltrated area. They are chronic in nature, and while they do not tend to perforation, they often have hypopyon associated with them.

Third: Rodent ulcers are found usually in advanced life, and are caused by a lack of power in the tissues to resist infection, following a small abrasion. They appear near the corneal margin and are separated from the healthy tissue by grayish zone. Seldom is hypopyon present, and I have never heard of a perforation resulting from them. They are, however, deep and in healing leave opacity. This type of ulcer is very rare. I saw one case in Knapp's clinic, and it was truly a bad condition, the patient losing the sight of one eye entirely and the other was of but little service. After an ulcer of this type starts it predisposes to others, and the entire cornea is finally one entire mass of ulcerations. In the case I saw, numerous blood vessels passed into it, but seemed to be of no avail in checking the ulcer, as in other ulcers. Galvano-cautery was used and this seemed to be the only way of checking the invasion. A special bacillus is supposed to be the etiological factor.

Fourth: Ring ulcers are not an infrequent type, considering the more important types. They are said to be found mostly among the aged and decrepit, and while I do not wish to contradict, I have never treated a ring ulcer in a patient over fifty. My worst case of this type of ulcer was in a young woman who persisted in having a ring ulcer when she became pregnant. What the association was I was never able to say, as she was a strong healthy young woman and I was never able to find any dyscrasia which could lower her resistance at these times. But, be that as it may, during these pregnancies she had three ring ulcers, all of which cleared up very nicely, and as a prophylaxis I have

advised her to avoid pregnancy. I have also seen several ulcers of this class among railroad men following minor injuries. I have not used galvano-cautery and have not had any opacities result, except in one case, which would have resulted in opacity had I been able to save the eye. In this case the entire cornea sloughed out at the edges and I was compelled to enucleate the eye. In this case, as I say, I used the cautery, but I could see absolutely no benefit from it. These ulcers adhere closely to the corneo-sclera margin and often extend entirely around the cornea, leaving the center clear. Fortunately pain is not a prominent symptom and rarely is an iritis present, and it would be very unfortunate if it were as atropine in these cases, I think, is contraindicated; in fact I usually instil eserine.

FIFTH: Atheromatus ulcers are rare. They are found in old corneal scars. These ulcers have a deposit of lime in them and are very prone to lead to perforation and panophthalimitis.

SIXTH: Creeping ulcers is another rare form, but is one much to be dreaded. They are very painful, much lachramation and a terrific iritis being present, and hypopyon often develops. I have a case now under my care which followed a specific infection in the eye. This patient had all the side issues relative to this condition,—iritis, hypopyon and all the pain it was possible for a man to have from an eye. He gradually recovered and, while both eyes are far from good, yet under the instillation of dionin, his opacities seem to be clearing up, and I hope to be able to give him useful vision.

These ulcers present a characteristic appearance. They begin near the center of the cornea and tend to spread toward the periphery; the opacity is greater at the ulcer margin than at the center, and while they at first present a raised appearance they soon become depressed. Often the cornea sloughs dreadfully and, if unchecked, leads to a very dense opacity of the cornea and often phthisis bulbi. Perforation often occurs, in which cases the iris prolapses in the wound.

SEVENTH: Diffuse or multiple ulcer. This class of ulcers is one I expect to hear some criticism on, as the border line between them and keratitis is not clear. For some time I have been watching a limited number of these cases and have come to the opinion that there was a distinct difference between them and keratitis. They simulate a simple ulcer of a very minor degree and are found in children suffering from glandular conditions, such as adenoids and tonsils; also in anemic patients in early and middle life. They yield readily to treatment when properly instituted and are very prone to be chronic when the general condition of the patient is neglected. Under this head I want to recite to you two typical cases.

The first, a patient who was brought to me with the history of several attacks of "sore eyes," as the mother expressed it, always associated with a bad cold; they lasted for weeks, and in fact one attack was hardly over until another would begin. I learned that the little patient had always

been a mouth breather and her mother attributed this condition to her always having a cold. Examination of the eyes revealed the above condition. I found several small ulcers in both cornea and a diffuse opacity of the same which was not deep, in fact not nearly so extensive as one would expect considering the many attacks she had had. Examination of the throat revealed very large tonsils and an adenoid that almost occluded the pharynx. I advised the removal of the adenoid and tonsil, which was followed by a rapid clearing of the cornea, and in a very short time her eyes were entirely free from opacity.

The second was a young man who gave a history of repeated attacks of ulcers of the eye, which would disappear, always leaving a scar. He also gave the history of these ulcers following colds and tonsillitis. I found in his throat very large tonsils and an enormous nasal polypus on the right side of his nose. Having just passed through the former case, and realizing the importance which this nasal and throat obstruction might bear to the case, I first removed them and gave the patient a boracic acid solution to instill in the eyes several times daily. He improved at once, and in this case, as in the previous one, two years have brought no further trouble. Who can say this was a coincident? I cannot, as I have demonstrated it to my own satisfaction in other cases, though not of so long standing nor has so much time elapsed since their treatment..

PROGNOSIS: As has been said, in most cases prognosis is favorable. Only in the most severe forms is the eye lost, and while the eye may take on a terrible aspect during attacks, yet with proper care they leave no bad opacity. As we know, Bowman's membrane must be destroyed to leave opacity. However, if the scar extends over the pupil when it does result, vision is destroyed or very bad. As long as the ulcer is foul we know not what will be its extent, but when it becomes clean, hope for the future may rise. When a pannus forms (which is usually transitory) prognosis is favorable as to time of recovery.

DIAGNOSIS: Is made from inspection.

TREATMENT: Under this I feel at liberty to differ with some as to method of treatment. Where the virture in not putting a covering over an eye with corneal ulcer is, I cannot see unless the ulcer be so insignificant it does not need it. The idea of giving better drainage without a dressing is as absurd to me as it would be not to dress an abdominal incision. A tight bandage is not necessary, nor is it good, but a small patch of gauze aids in keeping out irritating lights and infectious material, and above all it gives your patient a sense of comfort that he obtains in no other way. If necessary, change dressing twice or more a day. Change them yourself and you will know they are as clean as it is possible to make them. I never give any patient liberty to dress his own eye any more than I would give a cataract patient the same privilege. As to medication, any treatment that is death to bacteria and non-irritating is good for an ulcer. My preferred and almost sole dress-

ing in these ulcers is a one-half of one per cent. hydrarg. flav. oxide. ung. put up by a competent druggist, and this I consider very important, as a great many druggists absolutely cannot make this ointment non-irritating. It should be triturated for at least an hour, and more if you can get your druggist to do it. When iritis is present you can combine it with atropine, or in cases of peripheral ulcers it can be combined with eserine. The principal thing in treating corneal ulcers is to get the eye as nearly sterile as you possibly can. When this is accomplished it is impossible for an ulcer to progress in the eye any more than in any other media. I always use atropine in these cases if I have the least intimation of an iritis. This assists in alleviating the pain and very few patients suffer any ill effect from it, although I have used it, where I have extensive adhesions, as much as six grains to the ounce, either in solution or in an ointment. When the ulcer is near the periphery I nearly always use eserine and in many cases this prevents prolapse.

Aspirin prevents and controls pain better than morphine in many cases and does not lock up the secretions. One "don't" I wish to emphasize—don't use the cautery if there is any chance to save the eye without it, for in my opinion if the cautery is used extensively enough to be of any service it will result in opacities.

In case where we have hypopyon it is necessary to tap the anterior chamber, and in doing this the smallest incision that is possible to make and expel the pus or exudate is the best for the eye. I even prefer to tap the eye more than once rather than make a large incision. As to the treatment of the ulcer with lysol or carbolic acid, as is being done by some men extensively, again I cannot see the benefit to be derived from their use. They are very active caustics and very likely to be uncontrollable in which case they certainly leave opacities. My opacities have fortunately been a very small per cent. and I have trusted to the mercuric ointment in most cases. I believe that it is good treatment to remove the lachrymal sac in sloughing ulcers if we have any infection of the same. I have only used the cautery twice in ulcers and neither time did I think it was of any material benefit.

DISCUSSION.

Dr. Guy L. Noyes, of Columbia, said proper protective covering is very essential, especially with mild degrees of pressure; healing is more rapid and favorable. He had not found yellow oxide ointment to be as useful in the early as in the late stages of corneal ulceration; probably for the reason that its favorable action depends upon its stimulating properties. He had never seen bad results from the use of the cautery, but had sometimes regretted not having used it.

Dr. W. H. Schultz, Kansas City, stated that in corneal ulcers other than the superficial variety, one of the following operative methods is indicated, viz.: curettement, electro-cautery or paracentesis. Irritating

medicinal applications I have practically abandoned. Hot applications and atropine instillations are always indicated.

In threatened perforation a continuous pressure bandage is applied and patient is allowed to remove same only for local treatment. I think yellow oxide ointment is too irritating, therefore, contraindicated in the acute stages of corneal ulcers, but later on when repair has set in, it may be used with benefit.

In my experience I have secured the very best results from the use of iodoform powder and dionin in the form of an ointment.

Dr. John Green, Jr., St. Louis, said he had never used eserine in corneal ulcers, but could imagine cases in which it would be indicated. It was, however, an irritant and ordinarily contraindicated. A concomitant conjunctivitis should be treated, preferably with a weak solution of silver nitrate. He curettes the ulcer and then uses tincture of iodine. A mild topical application efficient for cleansing is 3% solution of quinine bisulphate. The multiple ulcers mentioned by the essayist are probably phlyctenulæ. He uses atropine, almost invariably combined with cocaine in an oily solution, which prevents the desiccating action. He would not advise paracentesis for every case of hypopyon.

Dr. J. D. Pifer, Joplin, said he floods the eye affected with a small ulcer, with hot boric acid solutions. He also advises hot applications, but not poultices. He gives purgatives, prescribes daily baths, better hygiene and good nourishment; also iron, cod liver oil, etc. He also uses atropin, but never uses eserine. The cautery is unnecessary in mild cases. He cleans out the ulcer and dusts calomel in the corner of the eye. If the ulcer does not improve, he then uses the cautery in the form of carbolic acid on a fine cotton-wound probe, neutralizing it with alcohol, following this with orthoform. In the later stages he uses the actual cautery; bandaging the eye is bad, as it increases the intraocular pressure. He leaves the eye half open if possible, and always treats the conjunctivitis.

Dr. Kelly, in closing, said that yellow oxide is stimulating and non-irritating, when properly prepared, and may be used in any stage of the disease. The multiple ulcers of which he had spoken were not phlyctenular. Hot applications are all right, but not as poultices such as are invariably used by patient. He does not invariably use atropin, which is only indicated in iritis. Iodoform does no good in the eye. A bandage properly applied produces no pressure, and can be changed often enough to prevent retention of secretions.

# RELATION OF THE PHYSICIAN AND SURGEON IN APPENDICITIS CASES.*

By A. B. Miller, M. D., Macon, Mo.

I cannot hope to say anything new on this much over-written subject. My apology for appearing before you in this paper is, that, notwithstanding the accumulated knowledge and the experience in the treatment of this, now well and usually easily recognized disease, the death rate still remains large, and the long overdue minimum mortality table does not appear.

It is evident that in the last five years the mortality from this disease has not diminished, or, if diminished at all, very little. It is profitable, sometimes, as the merchants say, to "take stock," "to invoice," and see where we stand. Let us ask ourselves the question, what is the matter? Why does not our mortality table show greater improvement? There must be a wheel in the mud somewhere, effectually barring the progress most certainly warranted by the accumulated knowledge of this disease and experience in its treatment.

The technique and skill of the surgeon are greatly increased; his knowledge of all the different phases of the disease, together with its complications, has greatly enlarged; likewise the general practictioner has made substantial progress in his knowledge of the disease. Then where does the trouble lie? Who or what stands in the way of a minimum mortality?

A well-grounded suspicion that a lack of proper accord between the surgeon and physician relative to the treatment of this disease is largely responsible for a too large mortality, prompted this paper.

In extenuation of the sins of the physician, if he has any, it is just to say that the unwarranted enthusiasm of surgeons of the "keen-cutter" class, has necessitated a more or less ultra-conservatism upon the part of the physician, and has given real occasion for lack of faith in his wisdom and judgment. Indeed, sometimes, such are the encroachments of surgery upon the medical field that the physician has begun to wonder if perhaps he, too, must be driven to take up the knife, or relinquish his title.

Then again, a great stumbling block to the general practitioner has been the lack of accord between the surgeons themselves, for it must be admitted that the surgeons have not agreed among themselves until quite recently as to the treatment of appendicitis; some advocating one course and some another, until the general practitioner has been unable to de-

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termine whom to believe or what course to pursue. For how could he be expected to be in accord with surgeons among whom there was no unanimity of action? My first postulate therefore, will be, let the surgeons get into practicable accord in the treatment of this disease.

At the very threshold of this discussion an important question arises, which, if it can be satisfactorily settled, will go far towards clearing up the situation and bringing the physician and surgeon into proper accord, a consummation devoutly to be desired and without which the minimum mortality table will never appear.

This all important question is: Is appendicitis a medical or surgical malady? This question once settled, a long stride has been made toward the desired goal of a more perfect unanimity and a minimum mertality. Here is where the first note of discord arises, and physician and surgeon begin to drift apart. How can we settle this question? Come, let us reason together in the interests of the thousands of unfortunate victims to this dangerous disease which the future has in store for us.

The plan of treatment which furnishes the lowest death rate, the surest cure, the permanent cure, and the least suffering, certainly ought to be the one adopted. No one can deny that this is a reasonable and fair proposition.

Now let the physician and surgeon stand up and each show us what his results are, and then we will determine into whose hands we desire to fall, as victims of appendictis.

It is only by comparative study of the results obtained, as presented to us in the various statistics, both medical and surgical, that a definite conclusion can be reached. In studying these statistics, let me preface my remarks with the suggestion that it will be impossible for medical statistics to be as accurate as surgical statistics are, because they can never eliminate the many mild cases reported as recoveries from appendicitis, where the diagnosis was doubtful and probably wrong; whereas, in surgical cases, the element of doubtful diagnosis should never enter. The most favorable medical statistics I have been able to find are those by Salhi in which he reports seven thousand cases medically treated, with a death rate of 10 per cent. This is a far less mortality than that usually presented by medical authorities. Most of them place it as high as 15 per cent. to 20 per cent.; some at 20 per cent. to 25 per cent. I am sure that the latter would not be too high for the physicians of average experience. Neither are we told whether the physicians reporting the seven thousand cases which Salhi gives us had numerous other cases saved by the surgeon that would otherwise have died. I know of no hospitals in the country where cases are treated alone medically; if such exists elsewhere they have not come to my knowledge and I feel inclined to doubt the value of his statistics. I am quite positive no such statistics that would be entitled to credence could be collected in this country.

Now let the surgeon testify. Morris says that in primary opera-

tions, 2 per cent. mortality is too high. Mynter's results are about the same as Morris'. Many surgeons claim an equally low mortality. Jacobson places the average mortality for all surgeons at 5 per cent. to 8 per cent. in primary operations.

It does not take me long to decide whether Salhi or Morris would treat my appendix. Is it right, when a confiding individual is sick and entrusts his life to us, to use any method in his treatment if we know of a safer and surer route to health?

But, to go back to the original question, is this a surgical disease? While all the medical authors include appendicitis among the diseases described, and appear to consider its classification among medical rather than surgical diseases, yet we will quote from a few leading medical authors, allowing them to speak for themselves.

Tyson says: "As soon as appendicitis is suspected, pending diagnosis, the surgeon should be called and associated in the case." Wilcox says: "Medical men are agreed, if ice locally, rest and opium, do not improve the situation in from 24 to 48 hours, call the surgeon and operate at once."

Osler, in his 1909 System of Medicine, says: "Medical men as well as surgeons, recognizing that it is often impossible to determine when an apparently benign case will terminate in sudden extension or rupture, with the development of general peritonitis, believe that it is usually wiser to regard every case of appendicitis as demanding surgical treatment." Again, he says: "Barring a few cases in which contra-indications exist, the only safe plan in the treatment of acute appendicitis is immediate or prompt operation."

Now, mind you, these are medical authorities, whose opportunities for observing the results of surgical treatment, as compared with the very best possible methods of the internist, should entitle their opinion to great weight. Are they right, or are they wrong? If right, will the physician please explain why the advice of such illustrious medical men of such ripe experience, is not followed. Ponder this in your hearts. Tell me why should appendicitis be classified among the medical diseases any more than salpingitis. The former slays its thousands while salpingitis slays its hundreds. And I can see no good reason why the latter should be classified as a surgical disease and the former as a medical disease.

The great frequency with which this disease occurs makes its consideration of far greater importance. In eight of the leading hospitals of this country one in every ten surgical operations is for appendicitis.

Now let us study the two methods of treatment in detail. What advantages does the treatment of appendicitis by the primary operation offer?

First, the lowest possible mortality that can be obtained.

Second, relapses will never follow.

Third, the incision is small, drainage usually unnecessary and hernia unlikely to occur.

Fourth, the duration of the disease is much shorter.

Fifth, by primary operations, suffering is greatly curtailed.

Sixth, septic infections are avoided.

Seventh, serious adhesions, giving rise to mechanical obstruction, attacks of colic, indigestion and general ill-health, unlikely to follow.

Eighth, such complications as phlebitis, metastatic abscess, embolism, general peritonitis, etc., will not occur.

Ninth, no fecal fistulæ follow.

Tenth, operation much less formidable and will not be so much dreaded.

Disadvantages. First, some weakening of abdominal wall.

Second, the patient wears a scar.

Third, some bellies may be opened in which disease is not found.

From the foregoing it would seem that the advantages are numerous and of great weight, while the disadvantages are trivial.

Now, let us consider the disadvantages of medical treatment:

First, higher mortality, average of 20 per cent.

Second, there is absolutely no remedy that the physician can claim has any specific action.

Third, recurrence is common, occurring in perhaps 25 per cent.

Fourth, recovery in 40 per cent. of the cases is only apparent, not complete. Some authors place this per cent. much higher.

Fifth, the impossibility of knowing when the appendix is not gangrenous, or will not become so, and when general peritonitis will not supervene.

Sixth, the following complications and sequelæ may be encountered: General peritonitis, general sepsis, abscess, single or multiple, transportation of septic emboli to the liver, lungs, kidneys, spleen, brain, parotid gland or heart; albuminuria, chronic nephritis, obstruction of ureter, with hydronephrosis, deep pus formation impossible of drainage, ileus, extensive adhesions giving rise to mechanical obstructions of the bowels and to attacks of colic, constipation, indigestion, anæmia and indicanuria, septic thrombosis in the liver, lungs, brain, kidney, mesenteric and hepatic veins, and, in fact, anywhere.

Osler reports a case of fatal hemorrhage into the intestine. Leudet reports hemorrhage into the arachnoid. Woolbrecht, in Gerhardt's clinic, found evidence of pleuritis in thirty-eight per cent. of cases medically treated. Pyosalpinx, ovaritis, pelvic peritonitis, cystitis, abscess of bladder wall, fecal fistulæ, pericolic, subphrenic and pelvic cellulitis and abscess.

Every one of these complications, and perhaps many others, has occurred in cases medically treated, and every one of them confronts the unfortunate victim of appendicitis, who must rely upon the resources of the general practitioner for relief.

A simple, uncomplicated, inflamed appendix is not a serious thing; nor is the operation for its removal either difficult or fraught with much danger. Why, then, allow it to become a serious and dangerous disease, fraught with difficulty to the physician and great danger to the life of the patient?

If these be facts, let us treasure them up in our hearts; and if they are not facts, show me my error.

In this day, when the ambulance-chasing lawyer is abroad in the land, it would be a dangerous thing to say in print that it is criminal to allow a simple inflammation of an appendix to become a serious inflammation, involving vital organs and greatly endangering life. But I should consider my defence poor, and should be at a loss to know where to turn for medical or surgical authority to sustain me in such a course.

Unless the foregoing facts can be controverted, appendicitis should be considered a surgical disease. The surgeon should be associated with the physician at the earliest possible moment, and the two should be in close relation in the case, that the question of time of operation may be wisely decided. The surgeon is usually called from the third to the twenty-fifth day of the disease, after the condition of the patient has become extreme or desperate, and he is called to operate usually as a *dernier resort,* having no choice in the matter as to time of operation. Often, also, he is called after operation has been decided upon and the patient and friends are expecting an operation, which creates an awkward situation and places both surgeon and physician in an embarassing position. This is especially likely to occur in late operations.

I am insisting upon the necessity of better concurrence in action upon the part of physician and surgeon in these cases; their early association and a more practical unanimity in their efforts. Surely none of us has too much wisdom and knowledge, and few of us enough, to handle these cases in the best interest of the patient. These remarks are particularly applicable to the cases that have passed the primary stage, for there will always be such cases that have already gotten into the stages where mazes of doubt and uncertainty obscure our way, and the anxious hours drag their weary lengths along because of our consciousness of our groping, and the utter insufficiency of our knowledge of what is going on and what is going to happen in the belly of our patient.

There is unanimity among surgeons as to primary operations. This is the only ground on which unanimity can ever exist between the physician and surgeon. The primary operation in appendicitis, removing the organ during the first day avoiding all the serious complications likely to follow if operation is deferred, rests upon the same rational basis, as the removal of a little lump in the breast before it has grown to involve the whole breast and axillary region. It is not an extreme measure and its advocacy is not unwarranted. In conclusion I submit to you this question: Wherein does conservatism lie? In the prompt removal of an inflamed appendix by primary operation, or in the expectant plan of

waiting and depending upon medical treatment and facing the dangers that beset your pathway? Decide for yourselves. I have already decided.

DISCUSSION.

Dr. John D. Seba, Bland: The question whether appendicitis is a medical or a surgical disease has been answered by Dr. Miller. It is undoubtedly a surgical disease and we should tell the patient, as soon as the diagnosis is made, that it is a surgical disease and that he should be operated upon as soon as possible, because no one knows what is going on within that appendix. The condition may be such that it may result in a rupture, peritonitis and death. I believe every community, or at least every county, should have one man who will go every year and take a postgraduate course and be ready at any and all times to perform an appendectomy when called upon.

Dr. F. G. Nifong, Columbia: I have had some experience in the country and have seen something of the treatment of appendicitis, in the country as well as in the city, and know the failures as well as the successes of the surgeon. I think the paper is very timely. It hits the point that needs to be emphasized, *i. e.*, why is not the mortality decreased? With all our skill as physicians and diagnosticians, whose fault is it? It may be the fault of the surgeon or the physician. There are too many unskilful surgeons, who cut into the belly headlong; but maybe it is not as bad to rupture an abscess sac as to have an abscess sac. Whose fault is it? The trouble is, we are not yet skilful enough in making the diagnosis in this common disease, and, when we do make the diagnosis, we are not prompt enough in calling a surgeon and in recognizing that it is a surgical disease. When the physician gets to that point I am sure we will have a lower mortality.

Dr. J. B. Norman, California: There is no question but that appendicitis is a surgical disease. By that I mean that the final treatment of every case is surgical treatment; but we are confounding the cases of appendicitis. A pustular appendicitis requires an incision at once and any general practitioner can make an opening under proper precautions. But in catarrhal cases the treatment is medical and then when the inflammation has subsided, the surgeon can take the case.

Dr. H. B. Cole, Sedalia: I would like to hear a discussion of this paper. There is nothing with which I come in contact in the treatment of disease that causes me more worry. I want to hear what you have decided to do.

Dr. Miller, in closing: I am free to admit the surgeon has committed many sins. I have committed some myself. After the period for primary operation has passed, no man should touch the appendix until after abscess formation. The primary period may be delayed until the second day. When the infection has spread beyond the appendix and the area around it is infected, I would rather depend upon the omentum

that stands on guard—I would rather trust to that for localization than to any surgeon I know. Why do Dr. Morris and Dr. Deaver have so low a mortality and we so high a mortality? Because, they see their patients within the first twenty-four hours and we see them up to the twenty-fifth day. When we have the coöperation of physicians we will have the same low mortality. How are you to get these cases on the first day? Never, until this body of men recognizes the necessity of getting the patient to the surgeon and having this operation done as soon as the condition develops. When the people know that this little lump can be removed safely, they will be more ready to call in the surgeon. I want to go on record as being in favor of the primary operation in appendicitis as the method that will save most lives and make the most permanent cures.

# OUR OVERSTOCKED INSTRUMENT CASE: A PLEA FOR SIMPLICITY IN OPERATIVE PROCEDURE.*

By Fayette C. Ewing, M. D., St. Louis, Mo.

Style in writing is always a reflex of the author's personality and often of his knowledge of his subject. It is the clothing in which we present ideas. The best style is the simplest, just as the most elegant habiliments with which we adorn our person bear the element of simplicity. Simplicity in expression, as we have said, conveys the idea of knowledge in that clear and concise expression indicates clarity of vision, the mastership of our subject. A very limited vocabulary only is necessary to express all that the human mind knows of any subject, and all the rest becomes mere verbiage if employed where simpler words may convey the idea. Some of the greatest stylists have been men, like Boswell, who was not elaborately educated, and did not turn naturally to words, but they knew their subject, as Boswell knew Johnson, and found no difficulty in writing what was clearly in their minds. We have but to read half a page in any ordinary dissertation, to apprehend the writer's clarity of vision and somewhat comprehend his mastery of his subject. His personality is stamped upon every sentence, and he may not escape the judgment.

This suggests the multiplicity of drugs in diseases where no specific is known, inevitable because of uncertainty. Medicine being so inexact a science in many conditions, therapy becomes largely empirical, hence, most of our so-called treatises are a mere rehash and enumeration of what has been said before. The author fears to put the stamp of approval on a certain drug for a given disease, and ends by saying that Dr. Smith got excellent results from the employment of one thing and Dr. Jones claims a cure from using another. When our author has discovered a specific or is aware that a particular drug has been proven efficient by the sifted-out experience of the profession, he does not hesitate with his *ipsedixit;* he knows whereof he speaks, and is in the position of the accomplished stylist in writing. The idea becomes definitely his own, and he acts upon it with the knowledge of assurance, directly and without deflection. When we have a specific, the prescription is loaded with a single bullet; the shotgun prescription is always a confession of uncertainty.

And here I must ask your indulgence a moment, if in this connection I refer to a fault in all our books. Most of them are mere dictionaries or encyclopedias of what the many have said. The author fears to dogmatize; he does not hazard his opinion in any unequivocal way; he tells

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you but very little of what *he* stands for, and is seemingly so anxious to make his work complete, to include everybody from A to Z that he leaves out "I." This is because he really has no message. When the real master appears, then we find the personal equation, and his book becomes a classic, as in the case of Mackenzie, Trousseau, and Osler. How much better it would be for us if our authors would simplify their writings and confine their recommendations to what they have had the best results from, letting the profession judge of their value by the knowledge of the author's recognized achievements. Then we might have more manuals and monographs and fewer general treatises, but each contribution would have the stamp of authority, such as it might be, and we could look to works on materia medica and therapy for the long list of indications in the various maladies suggested by others. It is Trousseau's personality that illumines his pages and makes them live; and how much of real value has all the world contributed to rhinolaryngology since the master Mackenzie wrote *himself?* How large would be the catalogue that would contain a list of his instruments, how thick the therapeutics that would enumerate his drugs? Perhaps no single work offers a better model of abbreviation than Osler's *Practice*, which, discussing the broad field of general medicine, reduces "treatment" to a minimum, in other words, to what Osler actually knows or believes in. And Osler is the most distinguished name in modern medicine. Osler's book is already a classic; and let it be ever remembered that the book did not make Osler great,—Osler made the book great. And so we see that in all these things simplicity comes of certainty, and certainty tends to simplicity. Let us take this affirmation as the keystone upon which will be built the arch that will support our contention in discussing our overstocked instrument case.

Dr. E. P. Cook, in a recent article on "Modern Surgery," dwells upon the tendency to operative simplicity. He says:

"Most of the important surgical procedures have been greatly simplified during the last decade. * * * The same simplifying tendency is also seen in the matter of instrumental equipment. A few years ago it was the ambition of every teacher of obstetrical forceps to perpetuate his fame. The variety of forceps was only limited by the number of professors. According to the most advanced view of to-day, a single pair will suffice to meet every need. Likewise, the Sims speculum and its various modifications have rendered obsolete the imposing array of bivalve, trivalve and multivalve specula which formerly encumbered the gynecologist's table. It is another instance of the simplifying influence of the discovery of the true principle underlying a given procedure."

If this is true of general surgery and gynecology, it surely is not the case of oto-laryngology, where the very reverse obtains. For we bid fair to be inflicted, if we not already are, with a pest of useless instruments to the menace of practitioner, patient and dealer; indeed, this

multiplication has been going on at a questionable rate, and while we may not dissociate it entirely from a laudable desire to increase our resources for fighting disease, candor compels me to say that the genesis of most of this output is found in a desire for self-exploitation. Of course, if no one tried to improve upon our instruments, operative progress would be retarded, but too often judgment is wanting or is subordinated to a desire for professional notice,—I shall not say notoriety, for it is an ugly word, and not in place among ethical practitioners, I cannot say fame, for the means involved are too petty to be coupled with greatness. Hamerton declares that disinterestedness is the indispensable of the many qualities necessary to the intellectual life; and by intellectual life he did not mean bookishness, nor even education, since a man could think intellectually with neither. He had in mind clear thinking, the capacity to grasp the truth. Our courts recognize this, as the slightest personal interest is sufficient to disqualify a judge. It is certainly a hard thing for our judgment to be clear in matters of personal interest, but if it were always possible to eliminate self when we think to add to our overstocked instrument case, I am sure that the increase would be much slower than it now is.

As an independent specialty oto-laryngology is only about twenty years old, and even now does not receive the recognition that ophthalmology does, since general practicioners habitually encroach upon it in all but the most obscure and complicated maladies. Yet there are instrument houses in our most important cities dealing in ophthalmologic and oto-laryngologic instruments exclusively, most of which come under the latter specialty, publishing catalogues of ample pages an inch thick. Why this formidable armamentarium? Is it because we have discovered so much since Mackenzie, or have become so much more expert in operating? Will any of us, not given to egotism, having the power to "see things whole," affirms so much? Or, in the words of Dr. Cook is it not too often that the oto-laryngologist thinks to "perpetuate his fame," which, however, ends in his being "clothed with a little brief authority." When we contemplate the innumerable forceps and curettes which are recommended for so simple an operation as adenoids, or the monstrous array of scissors, punches, hooks, knives and shaves, employed for turbinectomy, can we believe, with Dr. Cook, that "the same simplifying tendency is also seen in the matter of instrumental equipment" that he affirms is true of general surgery? Surely they are not "an instance of the simplifying influence of the discovery of the true principle underlying a given procedure;" surely the variations in shape and size of the organs do not justify such a hodge-podge. For tonsillotomy we have hot and cold snares of different sizes, tonsillotomes that are small and large, that cut smooth and scoop out; scissors, knives and electrodes as if tonsils were as many and varied as much as men's minds. Yet it is hardly possible to pick out a special journal and not see a new instrument exploited, nor are we spared when we open the pages of a

general journal. Few indeed of these instruments have the novelty of newness to commend them; they are usually but modifications, often very slight, of those already familiar to us which have been accepted as the ultimate of our necessities, considered in their serious aspect, they occasion the manufacturer expense, increase the stock of the dealer, confuse the young and inexperienced practitioner, tempt the older to a useless trial, are a menace to the patient and disgust the laity. By adding to the expense of the manufacturer they compel higher prices, and the same may be said of the small dealer who requires more money to conduct his business and suffers losses in dead stock which he must make up out of the practitioner. It is true of all manufactured articles that their cheapness is in proportion to the generality of their use, hence, fewer instruments would increase their employment and lessens cost. They confuse the inexperienced practitioner having limited means for equipment, and tempt more discriminative men to give a trial to that which is often highly endorsed and has the additional approbation of the editor who publishes the article. They are a menace to the patient in that they displace approved instruments with whose manipulation and employment the operator is familiar and expert, and finally they tend to disgust the laity stimulating their fear of operation by the largeness and formidableness of their array. In the catalogue of a Chicago house I find listed thirty nasal specula, seventeen nasal applicators, twenty cutting forceps, seventeen nasal scissors, and twenty adenoid curettes. In making up this list I have counted by names, hence the number may be multiplied as there are often as many as three sizes to some of these instruments. These, of course, are not all of the instruments recommended for these different conditions, but are simply what is listed in the catalogue of one house. They are suggestive of the multiplicity of recommendations for other indications. A rhinologist who has done some original work in the submucous resection of the septum, presents nearly twenty instruments for this operation, which requires extreme delicacy of manipulation but is simple, so far as multiplicity of instruments is indicated. To these many other men have added. A conventional mastoid equipment from the specialist now includes fully fifty instruments. How else, except through stress of desire to be original, counting it a mark of distinction to do things *in a different way* from the usual, are we to explain the operation of adenectomy through the dark and narrow nares when we have the amplest space and more definite illumination with post-nasal mirror and palate retractor? or the introduction of an uncontrolable, jagging, electrical saw as a substitute for the precise manipulation of a hand saw in the removal of nasal spurs? or what shall we think of a spoke-shave, "going it blind," for turbinectomy when a delicate scissors manipulated by the fingers in full light will do the work with accuracy and ease? These are but a few recommendations of men of large reputation, who should be ashamed to advance such malpractice methods. They "make the judicious grieve," and are a com-

mentary on what men may be led into, how their judgments may be clouded when self is at stake.

What is the remedy? Common sense. Unfortunately that is not always available. To a certain extent the manufacturer may discourage this pest, but he is not often capable of decision as to the practical value of an instrument. It would seem that it would pay the manufacturers to consult other authority than the originator before going to the expense of getting out a new instrument. The editor who publishes the article is, to a certain extent, blamable, but having officiated as associate editor of a leading journal devoted to oto-laryngology for years, I know how much tact is required to turn down a contributor. When a man is distinguished it is well nigh impossible without creating bad feeling.

And after all, is not this overflow an evidence of operative weakness? A man who knows definitely what he is going to say does not need a dictionary of words with which to express it; the physician having a disease to treat will not write a shotgun prescription when he has a specific, the author does not record a dozen remedies when he knows by experience of the profession that one is a positive cure, nor will the master operator require twenty instruments for a submucous resection nor fifty for a mastoid. They proclaim a weakness in our operative technique retarding our accuracy and delaying the operation. The operator on a mastoid with his pan full of superfluity, gropes before he selects, tries this and that in a vain hope for something more adaptable to the particular recess or protuberance when a more accomplished and accurate mastery of the few would facilitate his work. Instead of using his instruments they use him; he feels his helplessness without their multiple presence. He learns to accentuate the importance of that which he would be better off without, and his confidence in his capacity to do his work is correspondingly impaired if he happens to find himself without them. In his adaptability to emergencies, his ability to improvise, the country practitioner is far more resourceful than his city confrere, because of the necessities of his situation, and I doubt not that many of you specialists of small cities, where you are compelled to rely upon what you have at hand, do more creditable, if not better work than we of the great cities who have but to go around the corner to get any instrument we imagine we need. Confronted by some emergency, away from our base of supplies, our helplessness often becomes apparent. This reminds me of the story of Sir John Lubbock's queen ant which he confined in an enclosure full of food. But the queen not being practiced to help herself was in the way of starvation until a slave ant was introduced. This thrifty little creature soon busied herself in putting things in order, and feeding the queen, who waxed fat and beautiful.

One of the most distinguished surgeons of this Association once said to me, "when I feel that another can do a thing in a better way than I, it is my duty to refer the patient to him." But "better way" does

not necessarily mean *different way,* and we should have a care lest we think that in doing things in a different way we are doing them in a "better way."

If the specialist is to justify his existence it is through his capacity *to do things in a better way than his non-specializing competitor—with more safety to the patient, less expensive adjuncts, a minimum of discomfort and delay, and finally that his work should be of a higher average.* In so far as he cannot conform to these requirements he fails to justify his being and belittles his name.

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# SPINA BIFIDA.*

By J. M. Frankenburger, M. D., Kansas City, Mo.

Spina bifida, or hydrorachitis, is a condition of imperfect development of a portion of the posterior part of the spine, and consists of an abnormal congenital opening generally situated in the median line of the posterior arches of one or more vertebræ.

There are five varieties, as follows:

*Meningomyelocele,* in which the deficiency in the arches is associated with protrusion of the spinal cord and membranes, the wall of the sac consisting of skin and dura mater, lined by arachnoid membrane, its cavity being continuous with the subarchnoid space. The spinal cord leaves the canal, crosses the sac to the posterior wall and continues as a flat layer of nerve-tissue, still retaining its central canal. This is the commonest form and comprises about 60 per cent. of all cases.

*Meningocele,* in which only the membranes containing cerebro-spinal fluid protrude, the cord occupying its normal position in the spinal canal; this comprises about 8 per cent. of the cases.

*Myelocele,* in which the central canal of the cord communicates with the surface of the body, no skin covering the defect in the bone; this condition is incompatible with life and the child is nearly always still-born, or dies in a few hours after birth.

*Syringomyelocele,* in which the cavity of the tumor is formed by the dilatation of the central canal of the cord; this form is very rare.

*Spina bifida occulta,* in which there is a vertebral cleft without protrusion of cord or membranes; the overlying skin may be cicatricial in character, or covered by a large growth of hair.

Myelocele being incompatible with life longer than a few hours, it is useless to consider any form of treatment for that variety.

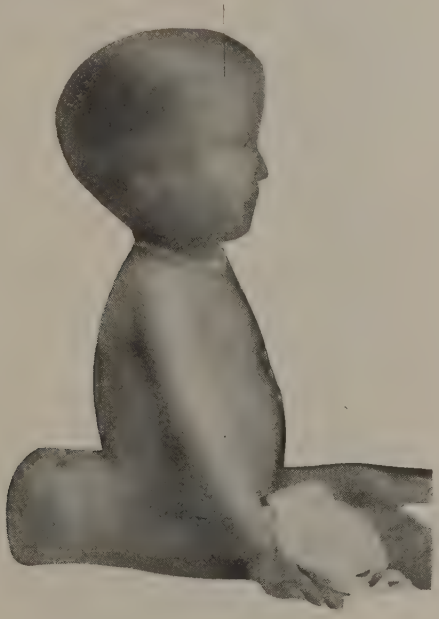
In these forms, meningo-myelocele, meningocele, syringomyelocele, in which the defects in the bony canal are associated with protrusion of the spinal contents, the spina bfida is recognized by the appearance of a rounded or oval tumor, commonly involving the lower part of the spine, generally in the median line. It may be covered by normal skin, but usually, especially where the tumor is of any size, the skin is thin and translucent. When the sac is lax the break in the arches may be felt. The general health may be good and none of the functions impaired, but many other disorders, such as hydrocephalus, paralytic talipes, etc., may be present, and where the cord is involved, paralysis of the bladder, rec-

*Read before the Ray County Medical Society, at Richmond, Mo., August 18th, 1909.

tum and lower limbs, perforating ulcers and other trophic changes, may be present.

The prognosis depends on the size of the spina bifida, together with the thickness and character of the overlying skin. If the bony opening is quite small and covered with healthy skin, the patient may reach adult life, but trophic changes are apt to supervene at any time. The majority of cases, however, if left to themselves, will die of marasmus, although death may result from rupture of the sac with escape of cerebrospinal fluid, or from meningitis following inflammation of the sac.

In view of the fact that nearly all of these cases are doomed to die at an early age, and if they do manage to survive, it is with some ensuing



complications which make them a burden on their family or community, operative procedures should be instituted, unless there exists some positive contraindication.

The operation to be considered is excision, with closure of the cleft, either by flaps of the soft parts or by osteoplastic methods. An incision is made through the skin on each side of the tumor, about half an inch from the base, marking out two flaps, which are carefully dissected off the meninges, back on each side to a little beyond the margins of the bony cleft. Expose the sac and place the head of the child low so as to avoid loss of cerebrospinal fluid, select some portion of the sac, preferably its lateral aspect, where there is less liability of encountering cord and nerves, and incise the sac. On examination, if the sac contains neither

cord nor important nerves, if its neck is small, it may be ligated and the sac excised. If the neck is large it may be excised and sutured. If the sac contains the cord or important nerves, or both, such structures must be carefully dissected out from the sac and returned to the spinal canal, after which the sac should be excised and sutured. The membranes should be sutured at a different angle than the skin, so as to lessen the liability of escape of the cerebrospinal fluid.

The bony cleft may be closed by either the soft or bony structures. If the opening is small, and the adjacent muscles and aponeuroses thick,

the structures may, with or without lateral liberating incisions, be brought together in the median line and sutured.

When large openings exist in the bony cleft, some form of bony closing is better. Dolinger retracts the muscles covering the rudimentary laminæ which form the boundaries of the defects, cuts through their bases, freeing them as little as possible from their soft parts, bends them over the defect, and sutures them there. Zenenko and Broca split the transverse processes of the two sides parallel with their faces, so as to form anterior and posterior halves, and bending their posterior halves backward, suture them in the median line over the cleft.

By other operations the osseous flap may be borrowed from neighboring or distant bones other than the vertebral column. Bony plates from animals have been inserted in the opening, and a celluloid plate has been sprung into the gap.

After the closure of the bony gap by one of the methods mentioned, the adjacent soft parts are carefully sutured, without drainage, a dressing applied with enough firmness to exert some pressure. The child should be put to bed with its head lowered so as to avoid, if possible, the escape of any cerebrospinal fluid.

Especial attention must be given to the after-treatment of the wound, on account of its close proximity to the anus, with the danger of soiling the dressings and infection of the wound.

The following case is reported on account of the immense size of the sac:

M. M., female, age 2½ years. Sac was quite small at birth, but had continued to grow until it had attained its present size as depicted in the accompanying illustrations.

No effort had been made to teach the child to walk, on account of the large size of the sac, but the lower limbs were fairly well developed and the child moved them at will. The sac wall was very thin, translucent and ulcerated. The danger of the operation as well as the danger of the present condition of the child with the extensive ulcerations present on the sac, was explained to the parents. Operation, June 22, 1909, anesthetic ether, which the child took very badly. The hips were elevated and the trunk and head lowered, so as to prevent too rapid loss of cerebrospinal fluid. On incising the sac, nothing was found but a few cutaneous nerves, the case being meningocele. After draining the sac, the bony cleft in the spine was found to be as large as a half dollar. The sac being so large it had produced pressure on both sides of the bony canal, so as to bring about absorption of the spinal muscles, and it was impossible to secure any muscle or aponeurosis to cover over the defect. At this stage of the operation the anesthetist declared the child to be in an alarming condition, and the opening was closed by suturing the membranes and skin.

The child rallied well following the operation and progressed nicely for twenty-four hours, when it developed convulsions and died suddenly.

# AMPUTATION AT THE SHOULDER-JOINT FOR SARCOMA OF ELBOW, RECOVERY OF PATIENT, WITH PECULIAR POST-OPERATIVE SEQUELÆ; SOME REMARKS UPON THE RELATION OF REFLEX-PARALYSIS TO INJURY OF NERVES.*

By B. Clark Hyde, M. D., Kansas City, Mo.

Fred Miller, white, laborer, 45 years old, no permanent residence, was admitted to the Kansas City Post-Graduate Hospital July 9th, 1908.

Previous History: No illness of any consequence until two years ago when he began to have pain, followed by swelling, in right elbow. This was treated as rheumatism. He took treatment from a number of doctors, but nothing had any effect on the disease, and finally he went to an advertising doctor in Salt Lake City, and paid him $400.00, being promised a cure, this money being the last of his savings acquired while working as a laborer on railroad construction in the Rocky Mountains. When his funds were exhausted, being unable to work, he became a wanderer. He was advised to have the arm amputated, but refused. Early in July, 1908, he was in Kansas City for a day or two. At that time the tumor was discharging a foul-smelling gangrenous fluid which saturated his clothing even to wetting the length of his trousers on the right side. A policeman made him go to the City Dispensary for treatment. He refused to go to the City Hospital for operation, and after having a dressing applied wandered away. He was told that if he remained in the city he would be compelled to go to the hospital as his condition was intolerable to his neighbors. He wandered away and on July 8th arrived at Olathe, Kansas, where he fell to the ground, being unable to proceed further on account of physical weakness. The municipal authorities took him in charge and the county physician brought him to the Post-Graduate Hospital the next day.

Condition on Admission: 4:30 p. m., July 9th. T. 99, P. 92. He seemed overcome with somnolence, and after being aroused to answer a question would respond briefly, and at once go to sleep again. After his recovery he stated that he did not remember entering the Hospital, and the only ante-operative hospital memories he had was complaining of pain once when the arm was lifted in the preparation for operation and also, that he asked to be given an anæsthetic as he was being placed on the operating table. He stated that he had lost considerable flesh, his normal weight being about 165 pounds. Pediculi capitis and corporis were present.

Physical Examination: The right elbow was enlarged to about the size of his head; the arm had been its present size for about one month.

*Read in the Surgical Section, Fifty-second Annual Meeting, Missouri State Medical Association, Jefferson City, May, 1909.

On the posterior surface of the elbow there were three large sinuses discharging freely a gangrenous putrid fluid. The sinuses had been present three or four weeks. Numerous maggots were present in the mass. The arm was swollen from about the deltoid insertion to the finger tips. Heart, lungs, kidneys, normal. Examination of abdomen negative.

Diagnosis: The growth was at first considered, partly from its hardness on palpation, an osteo-sarcoma, until after the operation when Dr. E. L. Stewart, the Pathologist at the Hospital, obtained sections showing it to be fibro-sarcoma, which diagnosis was later confirmed by Dr. Frank Hall. Dr. Skinner, the Hospital Roentgenologist, took a post-operative *x*-ray picture which shows no enlargement or thickening of bone.

Ante-operative treatment: Patient was given a prolonged bath, washed with an antiseptic, the right arm continuously irrigated with hot bichloride solution 1-1000 until maggots ceased to appear, and then the arm, from the wrist to the axilla was dressed in a liberal investment of gauze wrung out of hot bichloride 1-1000 and surrounded freely with absorbent cotton and bandage, with directions to change this dressing as often as it became saturated with discharge. The dressing was changed once at midnight and also prior to the operation. The treatment seemed sufficient to kill the maggots as none were seen when the arm was dressed just before the operation. The man was given a good meal at 6 o'clock p. m., but he had to be persistently urged to eat on account of his tendency to sleep. He slept less after midnight.

Operation, 10 a. m., July 10th: After the usual aseptic and anti-septic precautions, assisted by Drs. Lester Hall and Benjamin Jacobs, with Dr. Stevens administering the ether, I did an amputation at the shoulder joint according to the method of using lateral flaps, the axillary vessels being ligated before the remaining structures were severed. Van Horn cat-gut was used exclusively as ligatures, the axillary artery and vein being tied with size No. 3, the smaller vessels with No. 0, with silk-worm-gut as interrupted skin sutures, and a drainage tube was anchored with suture in a counter-opening in the most dependent portion of the flap. The patient stood the operation very well, but showed some shock, especially respiratory shock, after the brachial plexus was severed.

Subsequent history: Patient was returned from operating room with pulse 140. At 8 p. m., pulse was 80, temp. 99, resp. 20. Patient had not been nauseated since operation, feeling comfortable during afternoon. Complained of a feeling of excessive heat and said he would sleep as soon as he was cooler. Had slight headache, very thirsty at 8 p. m., sleeping at 8.15. During night complained of pain in chest. Had difficulty in breating as if the bandage around chest was too tight. Slept well after midnight.

July 11th: 8 a. m. pulse 82, temp. 100.4, resp. 23.

Dressings changed, gauze next to wound slightly stained with bloody

Fig. 1.—Dorsal surface of amputated extremity.

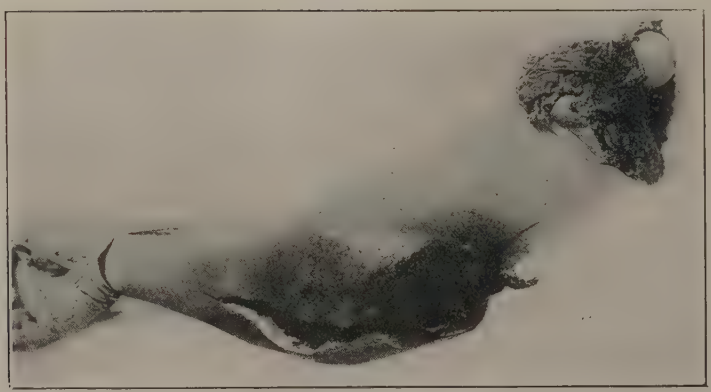


Fig. 2.—Flexor surface, showing gangrenous condition. The incision below elbow was made after the operation, for the purpose of obtaining tissue for microscopic sections.

fluid, which did not penetrate the outer dressings. Drainage tube removed. During afternoon complained of pain in left foot. Fairly good day until 7 p. m., when he complained of pain in right shoulder. 8 p. m. pulse 120, temp. 101, resp. 38.

July 12th: Had a fairly good night. Slept after 1 a. m. 8 a. m. pulse 88, temp. 99.4, resp. 28. Dressings changed at 10 a. m., very slight discharge of serum from drainage opening; quiet during afternoon. Patient on regular full diet. 8 p. m. pulse 76, temp. 98.8, resp. 24. Patient very thirsty.

July 13th. Patient had a good night. On regular full diet. Dressings changed. No discharge from wound. Good bowel movement as result of enema. Segments of taenia solium in stool. These segments were seen in every stool that was observed thereafter during his stay in hospital. No vermifuge was given. Patient before leaving hospital stated that he had several times taken treatment for tape-worm, but without satisfactory result.

8 a. m. pulse 76, temp. 98, resp. 18. 8 p. m. pulse 76, temp. 99, resp. 22.

July 14th: A discoloration of the skin over the abdomen was noticed. This discoloration covered an area corresponding above closely to the outline of the costal arches, below to a line drawn transversely an inch below the umbilicus, and laterally to a prolongation of the mid-axillary lines. This discoloration appeared like the dry brown stain left after the application of a silver nitrate solution. Otherwise the patient's condition was satisfactory. Sat up in bed.

July 15th: Patient was very restless and did not sleep. Seemed delirious at intervals. Given hyoscine hypo. gr. 1-200 at midnight and morphine hypo. gr. ¼ at 3:15 a. m. Patient was developing a ravenous appetite, and sitting up in bed ate every morsel of three full meals. Discolored area on abdomen darker.

8 a. m. pulse 78, temp. 97.4, resp. 20. 8 p. m. pulse 86, temp. 98.2, resp. 24.

July 16th: Patient delirious. The entire discolored area on abdomen had become one large bleb. This was dusted with antiseptic powder and covered with gauze dressing. Operation wound dry and healing. Patient received hyoscine gr. 1-200 at 9:30 p. m., and morphine sulphate gr. ¼ at 11:45 p. m.

8 a. m. pulse 82, temp. 98.4, resp. 19. 8 p. m. pulse 78, temp. 98.4, resp. 20.

July 18th: Delirious and restless until 2:30 a. m. Slept about one hour during the night. The serum from abdominal blister escaping into dressings. Antiseptic dressing applied. 8 a. m. pulse 80, temp. 98.2, resp. 20. 8 p. m. pulse 78, temp. 98, resp. 22.

July 19th: Rested and slept well during the night. Abdominal blister drying and scaling. Antiseptic dressing applied.

July 20th: Rested and slept well all night. Dressing changed.

Fig. 3.—X-ray photograph—shows no involvement of bone.

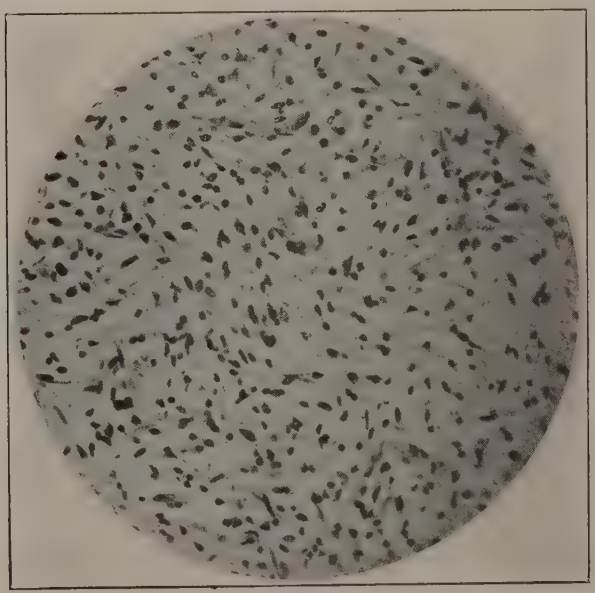


Fig. 4.—Microscopic section shows the tumor to be a fibrosarcoma.

Sitting up in chair this p. m. At this time the patient said that he had been oblivious to his surroundings and remembered nothing since his request when put on the operating table that he might be given something to relieve pain.

Temperature, pulse and respiration normal.

July 21st: The abdominal blister dry, scaling, and required no further dressings. Patient slept and rested well.

July 27th: Patient has steadily improved and condition satisfactory except that he has complained of pain in his left leg, this pain following the course of the sciatic nerve from its emergence from the pelvis to the foot. When he attempted to walk he felt a marked muscular weakness in his left leg. Had experienced nothing like this before the operation.

August 7th: Patient remained in the hospital until to-day. His general condition steadily improved, his mind became clear, he expressed a keen desire to return to work of some kind and he complains only of his left leg. The pain appears at irregular intervals, sometimes coming on at night when he is in bed, at which times he gets up and walks around for relief. Sometimes the pain comes on after taking a walk. At the foot the pain seems to be more in the plantar than in the dorsal tissues. On the day of leaving the hospital the pain is less evident but he says that it still bothers him a good deal.

The man left the hospital 26 days after operation, and remained for a few days at the Helping Hand Institute. He had learned to write with his left hand and said that as soon as possible he would obtain a position and earn a livelihood. He remained at the Institute a few days and since then I have been unable to locate him.

Aside from the operative features of this case I desire to emphasize the following:

(1) The appearance of a bleb on the abdomen, synchronous with delirium; the desquamation of the blister pari-passu with the disappearance of delirium, at the same time that there was no wound infection or other apparent condition that would cause an altered mental state; (2) the pain and muscular weakness complained of in the left lower extremity.

Can these sequelæ be ascribed to reflex paralysis or to toxic neuritis?

When the patient was in the hospital during the period of desquamation he was presented at the monthly meeting of the Post-Graduate Medical Society, and the subject of reflex paralysis came up. Dr. B. E. Fryer, who has had a large experience in the hospital service of the U. S. Army, spoke of a paper that had been presented in Philadelphia in 1864 by Drs. Weir Mitchell, George R. Morehouse and William W. Keen. This paper is entitled "Reflex Paralysis the Result of Gun-Shot Wounds," and is on file in the Surgeon General's library.

I obtained a copy of this paper in which are reported cases where paralysis of a remote part or parts has been occasioned by a gun-shot

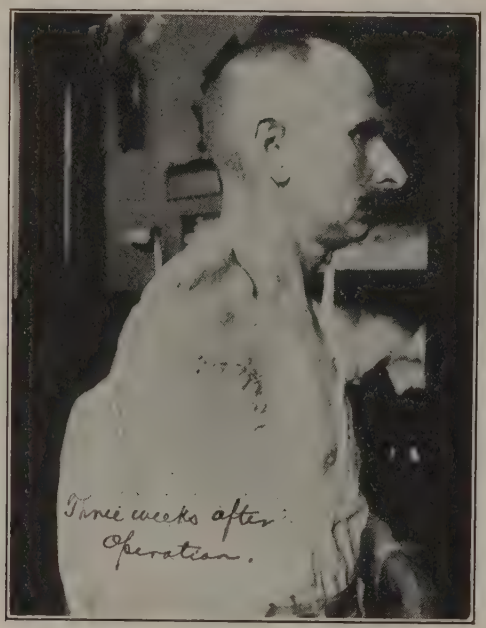



Fig. 5.—Result of operation.

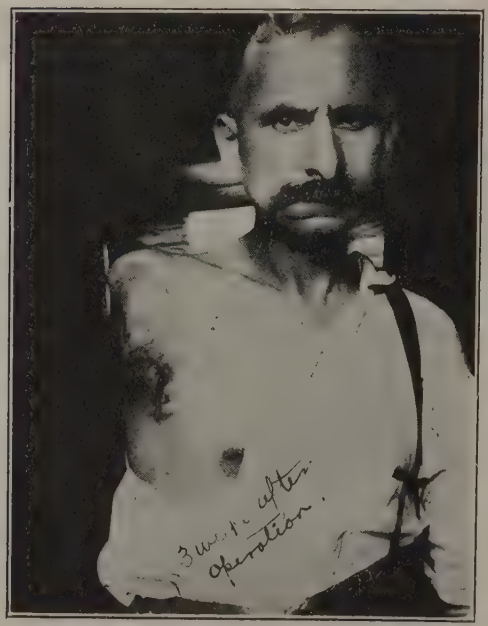



Fig. 6.—Result of operation. Affords a good shoulder for carrying purposes.

wound of some prominent nerve, or of some part of the body which is richly supplied with nerve branches of secondary size and importance. This paper is well worth careful perusal, as in fact are all the medical essays of this trio of trained and careful observers. I shall attempt merely a synopsis of seven cases.

Case 1. Ball wound of right side of neck, probably involving no important nerve directly; fracture of hyoid bone; wound of throat; reflex paralysis of left arm; probable reflex paralysis of right arm; early recovery of left arm; partial and remote recovery of right arm.

Case 2. Ball wound of right thigh, without wound of any large nerve; complete paralysis of all four limbs; speedy recovery of left arm, tardy recovery of the other limbs; subsequent analgesia of the right side.

Case 3. Ball wound of right thigh, with probable commotion of right sciatic nerve; partial paralysis of right leg; reflex paralysis of right arm; speedy recovery of arm; history unfinished.

Case 4. Ball wound of right testicle; paralysis of right anterior tibial muscles and peroneus longus. This weakness remained for several months.

Case 5. Wound by fragment of shell in external side of left thigh; wound healed in three or four months. After the wound was received patient noticed occasional smarting on the outside of right thigh. This gradually disappeared and gave place to an area of anæsthesia about five inches square, in which there was neither the sense of touch nor of pain.

Case 6. Ball wound, probably involving the right crural nerves. After three days from the date of the wound the right arm, which had remained weak from the time of the injury, became so completely paralyzed that the patient could no longer raise it to his lips.

Case 7. Ball wound of deltoid muscle; sensory and slight motor paralysis of same arm.

In three of these cases the leg was hit and the arm of the same side was paralyzed. In three cases the paralysis affected the opposite side of the body, and in one the paralysis of touch and pain was observed to have fallen upon a space symmetrically related to the wounded spot as regards position. No general law, therefore, can be deduced from these records, nor from what we see in the causation of reflex conditions from disease, such as, for instance, the formation of duodenal ulcers following burns, should we expect to find any inevitable relation between the part injured and the consequent paralysis. The constitutional condition at the time of wounding, as to excitement, mental and physical, may possibly have to do with causing the resultant paralysis.

In explanation of this the paper by Drs. Mitchell, Morehouse and Keen says, "Although we have long been aware that certain forms of disease are capable of causing paralysis of distant organs, of altering secretions and affecting nutrition, we have had no plausible theory of

the causation of the effects until Brown-Sequard attempted to account for this in a manner equally simple and ingenious. Recalling the fact that irritation of the vaso-motor nerves is capable of producing contraction of the blood vessels, he inferred that when an external nerve is violently or permanently excited, it may be able to produce contraction of the capillary vessels of the nerve centers and thus give rise to paralysis. It seems unlikely, even if we admit this explanation, that the capillaries could remain contracted for any great length of time.

But it is possible that the alteration of nutrition which this temporary anæmia causes, may give rise to one or two results, either a continuous disturbance of nutrition, which, however slight, would occasion grave results if it existed in a nerve center, or secondly, to a paralysis of the capillaries of the nerve center involved.

We suppose, first, the existence of an exterior nerve lesion, secondly a consequent irritation of the vaso-motor nerves in a limited part of the spine; contraction of its capillaries, anæmia, nutritive changes, and finally a relaxation of these vessels, which would be more apt to be a lasting condition and would in fact constitute congestion. Such a series of consequences may very possibly occur, and would no doubt be competent to cause a paralysis, whose site, extent, and character would depend upon the part of the nerve centers affected by the excitation. With so satisfactory an hypothesis before us in this modified shape, it would seem needless to suggest any other explanation. But in a region of research so little explored, it may be allowable to point out the fact that another mode of explanation is at least possible, and the more so, since there exists certain objections to Brown-Sequard's manner of viewing the subject.

It is to our minds improbable that contraction of the capillaries can continue for any great length of time. There is no experiment on record to show that this can be, or that it ever occurs in a nerve center. We have, therefore, added the suggestion of consequent, and why we may not say, primary paralysis of these vessels. Here we have firmer ground for opinion, since it has been most distinctly shown that in section of the sympathetic nerve this result does take place, and is singularly persistent. But when the bloodvessels remain contracted or dilated nutritive changes would occur, and these the pathologist has failed to find. If we now ask ourselves the question whether it may be possible to blight or exhaust utterly the power of a nerve center, without the intervening mechanism of contracted or dilated blood vessels, we are tempted to think that such a result may be possible.

It appears to us possible that a very severe injury of a part may be competent to so exhaust the irritability of the nerve center as to give rise to loss of function, which might prove more or less permanent. A strong electric current, frequently interrupted, is certainly able to cause such a result in a nerve trunk, while a general electric shock as a stroke of lightning, is, as we well know, quite competent to destroy the irri-

tability of every excitable tissue in the economy. Now if the former of these results can occur in a nerve so isolated, as practically to have no circulation, the loss of irritability can not be set down as due in such a case to a defect of circulation. Reflecting then upon the close correlation of the electrical and neural force, it does not seem improbable that a violent excitation of a nerve trunk should be able to exhaust completely the power of its connected nerve center. The central change thus brought about would no doubt involve the consequent or immediate occurrence of chemical changes, which would gradually yield as time went on. While this view seems to us adequate to explain the facts, the notion of vaso-motor irritation and capillary contraction of Brown-Sequard does not appear to be competent to cover all the facts.

We have pointed out that no one has ever shown that capillary contraction can exist as a permanent state in a nerve center; while on the other hand, it has been proven that section of a sympathetic nerve involves permanent dilation of blood vessels; but in the brain, which is supplied by the sympathetic of the neck, division of this nerve gives rise to no disturbance, although the side of the brain on which the section occurs grows warmer. However, it is probable that the whole supply of vaso-motor nerves to the brain does not come from the neck, while other organs, whose whole supply we can cut off, as the kidneys, do certainly suffer nutritive changes as a consequence of such sections.

One or other of the two theories we have offered must therefore be called upon to explain the central changes which give rise to reflex paralysis. Either the shock of the wound destroys directly the vital power of a nerve center or it causes paralysis of the vaso-motor nerves of the center, with consequent congestion and secondary alterations. But there is no reason why if shock be competent to destroy vitality in vaso-motor nerves or centers, it should be incompetent so to effect the centres of motion or sensation."

The above rather lengthy quotation in reference to reflex paralysis has been indulged in for the reason that its occurrence must be rare, and its pathology a matter which to-day is seldom brought before the profession. The pathology of neuritis is well understood and I shall not here attempt its description.

That systemic infection was present, which might have given rise to neuritis in the case reported in this paper there is no doubt. But the intensity of this infection was not sufficient to disturb the temperature much.

The effect produced on temperature by infection is a good index as to the systemic influence of toxæmia, and while it is not without exception, nevertheless it is the rule that during wound healing, if there has been infection, there is a rise of temperature continuing until the infection subsides.

It has been suggested that the term "reflex paralysis" should be discarded altogether, and in order to satisfy myself as to the position

that Dr. Weir Mitchell takes at the present day in this matter, and to ascertain if his views of the above reported cases have been altered by the pathology of recent years, I wrote to him in this regard and received the following reply under the date of January 9th, 1909. He writes, "I believe the term reflex-paralysis should be limited to cases where there is a real loss of power and I have no doubt at all that such cases do exist although they are rare. There are other reflex conditions which are not paralytic in nature and which cannot be classified as toxæmic. There is no escape from the belief that the cases described by Keen and myself were reflected paralysis. Their rarity must be extreme."

Either toxæmia or reflex-paralysis then, is to be used in explanation of the symptoms that arose subsequent to operation in the case reported above, which the condition on admission, the character of the operation, and the course during convalescence, serve to invest with exceptional interest.

# A PLEA FOR CIVIL SERVICE IN THE CHARITABLE INSTITUTIONS OF MISSOURI.*

By M. A. Bliss, M. D., St. Louis, Mo.

Since the beginning of independent government in the United States there has been a growing tendency, slow and frequently halted entirely for a time, toward a systematic classification of employees in the civil service. The words "civil service" have come to have a somewhat different significance than originally attached to them. We think, when we hear them, of competitive examinations, of security of tenure, of opportunity for promotion, and of classification of employment. In the Federal service these are applying to a large and increasing number of departments.

So-called civil service reform has fought its way step by step until now its opponents are reduced to a purely defensive attitude, no general attack on the principles involved being any longer possible. When we think of *the* civil service we think not of a service filled with employees selected by favoritism and expecting discharge with each change of administration, doing their work in any way just to get through and draw their pay—but of employees secure in tenure during good behavior, working to occupy a still higher position, stimulated by an ambition possible of accomplishment.

In a paper read before the Illinois Federation of Women's Clubs, October 22, 1908, at East St. Louis, Joseph C. Mason, Secretary of the Illinois Civil Service Commission and President of the National Assembly of Civil Service Commissioners, told of the progress of the plan since President Jefferson's time, and I quote freely from this succinct account of the struggles which the principles of competitive service have had to endure.

The first appropriation was secured by President Grant, and amounted to $25,000. Everything was left to the President's discretion "to prescribe such rules and regulations for the admission of persons into the Civil Service of the United States as will best promote the efficiency there of * * * and to employ suitable persons to conduct said inquiries." An advisory board with George William Curtis was appointed by President Grant.

On April 16th, 1872, the rules formulated by the Commission were applied to the departments at Washington and the Federal offices in New York.

*Read at the Annual Meeting of the State Board of Charities and Conferences, Farmington, Mo., November 4, 1909.

January 16, 1883, the present Civil Service law was passed and approved, sixteen thousand employees were by this law placed under the rules of the civil service, and during each administration since then more have been added, so that on June 30, 1908, there were 352,000 employees in the Government service, of which 260,637 were subject to examination.

Since the last named date many employees in the "Five Civilized Tribes Commission," the General Land Office, National Parks and Reservations, have been placed in the classified service. The representatives of 53,345 Fourth Class Postmasters, convinced of the merits of the system, asked to be placed in the classified service, and on December 1, 1908, 15,000 were so placed. The Philippines and Porto Rico have their own Civil Service Commissions. Federal positions in Hawaii, Alaska and on the Isthmian Canal Commission, are under Civil Service rules.

The first state to pass a civil service law was New York, in 1883, followed by Massachusetts in 1884. Illinois passed a law covering 2,222 positions in the state charitable institutions, in 1905. Wisconsin passed a civil service law the same year. Colorado passed a law in 1907, covering the state charitable institution and the cities that wished to adopt it. Many cities in the United States—Los Angeles, San Francisco, Denver, New Haven, Des Moines, New Orleans, Boston, Duluth, Trenton, N. J., Portland, O., Philadelphia, Pittsburgh, Nashville, Seattle, Milwaukee and Madison,—have established classified civil service, with rules adapted to the exigencies of the department covered. The Forestry Department of the Federal Service has been added to those in which an examination is required, and three hundred young men stood the examination for forester during this past summer.

This short survey will serve to show how rapidly the idea of classified service is spreading. It has passed the test of time. All about us we have actual working examples of its usefulness in securing efficient employees.

In our sister State of Illinois the law of 1905 is in full operation in all of the eleemosynary institutions, and we shall have an example near at hand to study and improve upon if we may. Missouri needs only to be shown. With her vast natural resources and her rapidly increasing population, fifth in the Union, but always ambitions to be first in all ways, she wants the best and will be content with nothing short of it.

The third annual report of the Civil Service Commission of Illinois has been issued. There are seventeen State charitable institutions with 2,343 employees in service. All below the superintendents, except chief clerk, one stenographer, and the treasurer, are included in the classified service.

This means that the service is uniform in institutions of like function throughout the State. That every employee entering the service must stand an examination to establish his or her fitness for the place applied for. That removal is only possible by the consent of the Civil

Service Commission. That in most departments there is opportunity for promotion, either in the same hospital or in another of like function.

It hardly seems necessary to do more than enumerate the features of such a plan to select and train employees for State charitable institutions. The question of tenure plays a very large part in efficiency of service. If tenure depends on efficiency of service and not on favor or political considerations, it is fair to conclude that individual endeavor will be of a higher sort. If close application can secure promotion, with higher duties and better pay, and secure both without the intervention and in spite of special influences, if every tub stands on its own bottom and every man's welfare in the service depends on how faithfully he does his work, it seems inevitable that a higher quality of service will be had.

I do not mean to condemn in toto the present system. It has some good features, but more bad ones. The good can be retained and the evil eliminated under civil service rules.

I believe in the generally recognized rule that the superintendent shall be supreme in authority in the institution. That he have power to suspend any employee under him, his reasons for doing so, however, to be clearly stated to the Commission, the employee having notice of sufficient length to reply. The present plan in Missouri, of the appointment of a Board of Managers for each institution which selects all the employees, from superintendent down, does not seem to me to compare favorably with the plan of competitive examination and a classified service. In fact I am inclined to believe that it would be far better to have a well-paid State Board of Managers for all the institutions, operating in conjunction with a Civil Service Commission, all their time to be devoted to the duties incident to the execution of their office. I would hope to see, eventually, all the superintendents selected from the classified service. The law of eligibility in New York State now provides for five years service in the resident medical staff of an institution for the insane, in a position above the grade of medical interne, two years of which shall be in a grade above that of assistant physician. Also competitive examination. It is universally conceded that special training is imperative in the care and treatment of the insane, and one is certainly fitted more thoroughly for executive duties when he has had experience in meeting the divers problems presented in conducting a plant where a large number of employees are in service.

It may be said that the work constitutes a specialty and the best results will be obtained by those whose training has been long and varied. Moreover, when a man has spent the time necessary to acquire thorough competency in this field, he has in a measure unfitted himself for other lines of work. The higher attainment he has reached in psychiatry and executive duties the more singly must he have applied himself to special tasks and the more must he have neglected other branches and other duties. He has formed himself into a useful instrument and his energies

should be applied in the direction which will give the best results to the State, his family and himself.

This seems to me to argue the necessity of selecting superintendents by competitive examination from a trained class, and of retaining them in the service of the State as long as high efficiency is maintained and they desire to remain.

All the superintendents present will no doubt testify that getting started, with new and untried help, is no light task. Every one of the changes under the present system involves changes in the under staff and in the help generally.

In the last three years the State Hospital at Nevada has had, I believe, four different superintendents, at Farmington three, at St. Joseph three. The present law does not allow a superintendent time enough to get fairly into the swing of the work before he must make way for a successor, who meets a like fate.

In the matter of a State Board for all the charitable institutions I am not aware that the plan has been tried without local boards to act under them, but I believe with only eight or ten hospitals to manage, and with a classified service, managed by a separate commission, *i. e.*, a Civil Service Commission, the plan would not only be feasible, but would bring about a more even administration in the various hospitals and subserve the needs of each one better. Under the present plan each institution makes its own fight for appropriation for maintainance and betterments. More or less rivalry exists among the local boards to make their per capita the lowest with a view to showing most economical management. This does not always result in the best interests of the sick poor, for whose welfare the whole system exists.

A State board, having no local attachments and freed from the demands of politics and personal favor by a civil service examination of every proposed employee, could, I think, judge more fairly the needs of each institution and apply available funds where most needed. A stable personnel secured by competitive examination and kept to a high state of efficiency by adequate supervision, would contribute greatly to the smooth running of the various hospitals, and the general board would not have the perplexities to meet that now puzzle the local boards.

# OSTEOSARCOMA: REPORT OF A CASE.

By C. W. Watts, M. D., Fayette, Mo.

*Histology.* Notwithstanding the faithful, long and careful study of sarcoma, little is really known of the true etiology of these vascular tumors. The microscope has aided wonderfully in the diagnosis of sarcomatous growths, so that now the astute surgeon is not likely to make a mistake if he takes time and avails himself of the microscope and the modern works on surgical pathology. The most frequent error in diagnosis is, to confound it with carcinoma and like growths.

While our early surgeons did not have the diagnostic facilities that we now have, yet we may mention the names of Virchow, Bilroth and our own Mott, Gross and Agnew as surgeons who have given us in their works very good and intelligent descriptions of sarcoma. Among our late writers Dr. Warren, in his "Surgical Pathology and Therapeutics," has given us the best and most exhaustive facts as regards its true pathology, and Dr. N. Senn in his work on "Tumors" has also helped us.

In 1866-7 at the clinics of Dr. S. D. Gross and Dr. Jos. Pancoast, we had the pleasure of seeing several sarcomatous tumors removed successfully. In 1890 at Atlanta, Ga., Dr. J. M. Gaston, aided by Dr. Joseph Price, of Philadelphia, and others, removed the largest osteo-sarcoma on record—65 by 48 inches—from the left leg; extended from crest of illeum to middle third of tibia.* We wish to call the attention of the profession to the interesting facts given us by those two great students of pathology, Pawlowsky and Steinhaus, who, perhaps, have studied the cells of osteo-sarcoma perfectly. They have proven the following facts by personal observation:

1st, wherever you have connective tissue there you may have sarcoma. 2d, the femoral and maxilary bones are its favorite locations. They divide, for convenience, the cells into the small and large round cell; giant and spindle shape cells, very much after the order of Virchow. The sarcoma cell begins to grow under influence of a parasite, like the tubercle; first from a spore in protoplasm; spherical and oval. Dr. Warren well adds that the clinical significance of a sarcoma depends not only upon the nature of tissue, but also upon the locality in which it is found.

*Prognosis.* All writers agree as to its gravity and its liability to return. In 1896 we were called to operate on Mr. J. H., of Mexico, Mo., who had a very large osteo-sarcoma involving nearly the entire superior maxilla. He had waited too long and he died from a fearful hemorrhage a few days after. In the same year we removed successfully an

*International Clinics, April, 1891.

osteo-sarcoma from the superior maxilla of Mr. N., of Mexico, size of an English walnut.

As to the time for operation, let us say, always the sooner the better, after a careful diagnosis and consultation with experienced microscopists; and then a careful preliminary preparation of your patient, and if possible give your patient the benefit of being in a good hospital, with a first-class trained nurse, and keep him in the hospital long enough for observation. After this migratory and very imperfect outline of an introduction, we come now to the report of a recent case we have had, and its results.

Mr. J. T. G., a merchant of Fayette, Mo., aged 66 years, a man of fine constitution and without any history of specific trouble of any kind, first noticed a small tumor on his right leg in middle third of femur, size of a bird's egg, not painful or tender and with no discoloration or swelling. In 1907 he called the attention of Dr. N. E. Smith to it, but it gave him no inconvenience until it began to grow to the size of a hen's egg and caused him pain and discoloration and interference of muscular movements of leg.

In August, 1908, it commenced to give him pain and to swell rapidly and had a lilac color.

On September 26th he consulted us and we found a very large tumor, size of a goose egg, occupying a place midway of the right femur, lilac in color, painful and movable, and did not seem to involve the periosteum; it contained spindle shaped cells and looked very much like an osteo-sarcoma. We proposed an immediate operation.

On September 27, 1908, at the office of Dr. N. E. Smith, who assisted, we gave chloroform after a local anæsthesia had failed. We did not think it could be carcinoma as there was no hereditary history, cachexia, or glandular involvement in groin or axilla, and his general health was excellent.

We removed the entire tumor and the hemorrhage was severe. After removal the wound looked healthy and was kept open, dressed every day for two weeks. In the fourth week the wound commenced filling up with a larger tubor leaving no doubt as to its character. He went to St. John's Hospital and put himself under the care of Dr. John Young Brown, who had microscopists to confirm his diagnosis. After an exploratory incision in front 4 inches long, advised amputation of the leg. This Mr. G. refused. Dr. Brown then removed, very successfully, the tumor, and we are told used serum therapy for several days.

Mr. G. returned home in December and the wound healed nicely in its entirety. He has taken no constitional treatment since his return, and used only local baths of alcohol.

Since there has been no indications of a return up to date, April 20, 1909, and while three-fourths return he may prove an exception. He is apparently well and we hope will remain so.

In conclusion let us remind you not to make a mistake in diagnosis,

and not confuse it with carcinoma, from which it is as distinct as tuberculosis. It is no kin to cancer and has no glandular involvement only as by extension to locality, and secondarily never primarily so.

Don't from jealousy or selfishness refuse your patient the benefit of a full consultation, and by all means include a practical expert microscopist. As to constitutional treatment, we would give the patient the advantage of serum therapy although it is yet in its infancy, but is highly recommended by those who have tried it.

Where you know that the tumor involves the medullary canal and is endothelial we do not hesitate in advising amputation of entire leg or shoulder.

Since writing the above my friend, Dr. S. H. Watts, of Charlottesville, Va., has successfully removed this month the entire right arm and shoulder of Mr. D. for such a tumor, and patient is doing well at last report.

Let us study this form of vascular tumors and report all cases. We hope to hear more favorable reports from the serum treatment in the future.

NOTE.—November 17, 1909. The patient is doing well. He is up and around, working; wound is entirely healed.

# Journal
# Missouri State Medical Association.

The Official Organ of the State Association and Affiliated County Societies.
Published Monthly under the supervision of the Publishing Committee.

ADDRESS ALL COMMUNICATIONS TO METROPOLITAN BUILDING, ST. LOUIS, MO.

Volume VI. DECEMBER, 1909. Number 9.

E. J. GOODWIN, M. D., Editor.

PUBLICATION COMMITTEE:

Walter B. Dorsett, M. D., Chairman. M. B. Clopton, M. D. M. C. Shelton, M. D.


## EDITORIAL

### STATE ELEEMOSYNARY INSTITUTIONS AND CIVIL SERVICE.

During the past few months considerable publicity has been given to certain occurrences in some of our eleemosynary institutions, and the methods—or shall we write the lack of method—in the administration of the affairs of these institutions have been severely criticized, with the result that charges of mistreatment of some of the inmates have been made against the management. The latest instance is the published account that an aged inmate of the State Hospital at Nevada had died without medical attendance, and at whose inquest it transpired that personal violence had been used as evidenced by ten broken ribs on one side, which, in the opinion of the coroner's jury, at least hastened death; the inquest, however, failing to fix the responsibility for the assault.

Our State Association cannot any longer ignore these happenings, for the medical profession is responsible for the proper care of the inmates of our charitable institutions, yet in point of fact, the medical organization has little or no influence in the management or control of the medical affairs of these institutions. Since it is evident from past experience that our State Hospitals—some of them at least—are not well managed, to state the case mildly, and that this fact is due to inefficient and untrained assistants, the profession should make a demand for the introduction of the merit system in the selection of all officers and employees in our State charitable institutions. The establishment of civil

service rules in State hospitals and homes has been tried in many other parts of the country, and not only has greater efficiency of officers and employees been observed in every instance, but the inmates were cared for with some of the attention and solicitude which, as wards of the State, should be theirs.

At the recent meeting of the State Conference of Charities and Corrections at Farmington, Dr. M. A. Bliss read a paper in which he advocated the adoption of the merit system in Missouri. The paper is published in this issue of the JOURNAL (page 385) and we ask for it the careful and thoughtful attention of every member of the Association so that when the question comes up for consideration in the State and County societies, suitable action may be taken towards promoting the adoption of this system in Missouri. That the subject is a vital one and that it is agitating the minds of thoughtful persons, not alone in the medical profession but among the laity as well, is shown by the editorial comment in the St. Louis *Post-Dispatch* favorable to the system; and the resolutions adopted by the St. Louis Neurological Society recommending that the Governor appoint a civil service commission to examine all applicants for positions in the State eleemosynary institutions. These resolutions are published on page 400.

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## OBJECTIONABLE NEWSPAPER ADVERTISING.

In our last issue we announced the action of the Publication Committee directing that the JOURNAL reproduce objectionable items in the lay press which unduly exploited the achievements of physicians in the professional care of their patients. In response to the request that clippings be sent to the JOURNAL, we have received a number of such items. These were made the subject of discussion at a meeting of the Publication Committee in joint session with the Executive Committee. It was the sense of the members of the committees that, having given the warning, it would be better to publish, at this time, only the names of the papers in which the items appeared, with an extract showing the character of the matter to which objection is held, without naming the physicians who were mentioned in the articles. The purpose of this action is to avoid any injustice being done those whose names might have been used without their permission, and allow more time for county societies to warn their members against permitting lay papers using their names in an objectionable manner in connection with news items concerning the illness or injury of persons under their care. In accordance with this action, we publish the following:

## SWALLOWS COCKLE BUR.

"——, ten years old, of ——, had one of the most painful and, at the same time, unusual accidents happen to her, which has occurred here . . . . She was brought to Drs. ——, who were unable to get to the bur with any ordinary instrument . . . . They made an incision below the vocal cords . . . . . enabling them to take it out that way. It was one of the most peculiar and painful operations they have performed for some time."—*The Daily Express, Kirksville.*

## SURGEONS CLEAR CLOUDED BRAIN.

Such are the headlines over a column description of an operation on the brain, to relieve pressure, with the hope of thus restoring the reason of the patient; the operation occurred at an hospital in St. Louis. The article is written in typical newspaper style and so worded as to compel the belief that it was, in all its essential medical features, dictated by one of the surgeons. The clipping sent us is from the St. Louis *Post-Dispatch.*

## THROBBING HEART IN HAND.

Under this heading there is a vivid description of how certain surgeons in an hospital in St. Joseph, opened the pericardial sac and discharged two quarts of pus. Quotations of the remarks of one of the surgeons are interspersed in the description of the operation. The item sent to us is from the St. Joseph *Daily News-Press.*

"Mr. —— came in Friday to have a surgical operation performed. The operation was performed Sunday by Dr. ——. The patient is reported doing nicely."—*The Norborne Leader.*

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## END OF FISCAL YEAR.

The fiscal year of the State Association ends on December 31st, and, therefore, all members should pay their dues for 1910 before January 1st, so as to enable the State secretary to enroll them in the roster for the new year.

The roster of membership will be published in January instead of in this issue, as was announced last month, in order to give all members an opportunity to meet their obligations to the Society, and be represented in the published list of members.

The councilor of each district has been furnished with blanks to be sent to each member in his district, and thus, the councilor will lend con-

siderable assistance to county societies' secretaries, in impressing upon the members how essential it is, that dues to the local society be paid promptly.

The secretaries of local societies are urgently requested to send remittances and lists of paid-up members to the State secretary as promptly as possible, after members have paid their dues. Only in this way can irritating delays and annoying errors be corrected, and members properly enrolled on the secretary's books and the mailing list of the JOURNAL.

The JOURNAL is not sent to members who are delinquent in the payment of their dues, nor can such members be granted the privilege of assistance from the Defense Committee, should they be so unfortunate during the period of their delinquency as to be made the target of a suit for malpractice.

Members will readily appreciate the necessity for prompt payment of dues to the local society, when these important privileges of membership are remembered, and the fact that non-payment of dues operates automatically in suspending them from participation in such benefits. A delay of a few days in the payment of dues to your local society might result in depriving you of these benefits, just at a time when they would be of the greatest service in protecting your interests.

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## CHANGE OF DATE OF ANNUAL MEETING.

In view of the close proximity of the meeting of the American Medical Association in St. Louis in 1910, to the usual time of meeting of the State Association, the officers have fixed the date for the next annual session of the State Medical Association, for May 3d, 4th and 5th, 1910.

Reports from the members of the county society in Hannibal, indicate that this date will be much more convenient for the Committee on Arrangements to make preparations for the entertainment of the Association, and not conflict with any other convention.

It should also be remembered that the holding of the annual session on May 3d will give the members of the State Association an opportunity to return to their homes, and allow them an interval of about five weeks in which to make their preparations to attend the American Medical Association in St. Louis on June 7th.

# EDITORIAL NOTES

THE Boone County Medical Society has organized a post-graduate class, which has been holding weekly meetings since September 1st. From twelve to fifteen men have been present at each meeting. Those assigned places on the program have always responded, and the discussions have been interesting. The members of the laboratory now in connection with the Medical Department of the University of Missouri, are members of the class and are a great help in the discussion of scientific questions. After the regular program refreshments are served and an hour spent in informal discussion.

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COMMITTEE on Credentials and Arrangements for the United States Pharmacopœial Convention.

President Horatio C. Wood has appointed the following committee on credentials and to make arrangements for the United States Pharmacopœial Convention, which will be held in Washington, D. C., beginning Tuesday, May 10, 1910: Professor O. T. Osborne (Chairman) Yale University, New Haven, Conn.; Dr. H. C. Wood, Jr., University of Pennsylvania, Medical Department, Philadelphia, Pa.; Mr. L. S. Hilton, Washington, D. C.; Mr. W. L. Cliffe, Philadelphia, Pa.

The following officers of the convention are ex-officio members of the committee: President H. C. Wood, Jr., University of Pennsylvania, Medical Department, Philadelphia, Pa.; Secretary H. M. Whelpley, Washington University, Medical Department, St. Louis, and Assistant Secretary Murray Galt Motter, Hygienic Laboratory, Washington, D. C., James H. Beal, Scio, Ohio.

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DR. F. B. FUSON, of Springfield, has been appointed a member of the State Board of Health, to fill the vacancy caused by the expiration of the term of Dr. F. J. Lutz.

Dr. Fuson will be a valuable addition to the membership of the State Board, for he is a man of sound judgment and in thorough harmony with the aims and objects of the Board in its effort to maintain a high standard of medical education and public sanitary measures in our State.

Dr. Fuson, soon after his graduation from the Missouri Medical College in 1886, located at Mansfield, this State, and practiced continuously

in that town until 1905, when he moved to Springfield. He is a member of Green County Medical Society and an ex-president of the Southwest Missouri Medical Society, and of the Tri-County Medical Society (Wright, Douglass and Texas Counties). He was one of the principal organizers of the Springfield Hospital, and is the local surgeon for the Frisco Railroad.

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The physicians of Liberty and vicinity have organized a college extension course, which meets every Friday night at the office of Dr. J. M. Allen of Liberty. Drs. Rowell and Rice, of Kearney, and Drs. Suddarth and Woods of Smithville, have been attending and are valuable members. The subjects upon which papers have been written and discussed are "Value of Antitoxin," "How Long the Klebs-Loeffler Bacilli Remain in the Throat After Using Antitoxin." This was demonstrated by cultures to be over twenty-one days in majority of cases. "Value of Immunizing Doses of Antitoxin" was discussed and its use endorsed. Although it was found that among those immunized not one had diphtheria, cultures made twenty days after immunization showed the attenuated germ. "Heredity" and "Immunity" were the subjects of one meeting. The "Thyroid Gland" was the subject for discussion at the October 5th meeting, followed, on October 12th, by a discussion of "Opsonic Theory and Bacterial Vaccines." Dr. J. M. Allen is president and Dr. Burton Maltby, secretary.

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The State Secretary has arranged for the sale of a State Association Button, and is now ready to deliver the same to those who wish to own this insignia of membership. The button is handsomely designed, and all members should be proud to possess one. The price of the button is $1.00.

# OBITUARY

## ROBERT C. CARTER, A. M., M. D.

Dr Robert C. Carter was born in Richmond, Va., January 12th, 1838, being one of the eight children born to William M. and Jane Carter, who emigrated to Lafayette County with the remainder of the family in the year 1840, and located at Dover, Mo. The subject of this sketch is the last of the sons to pass away. Two sisters are yet living; they are Mrs. Meng, of Lexington, Mo., and Mrs. Bettie Harwood, of Dover, Mo.

Dr. Carter's earliest education, after leaving the public schools of his home, was obtained in the Masonic College of Lexington, Mo., before the Civil War. In the year of 1861 he received his degree of A. B. in the Missouri University, and then, owing to the war between the states, he enlisted in the Confederate army and fought diligently, as did many others of the south, for the cause to which he held his allegiance. After being honorably discharged from rank, he again resumed his duties at the State University and received his degree of A. M. in the year 1865. He then took up the study of medicine, and graduated with honors from the McDowell Medical College in the year 1868.

After his graduation he located at Dover, Mo., and practiced for six years in partnership with his family physician, Dr. Kincannon; he then married and moved to Gentry County, Mo. In the year of 1880 he removed to Lafayette County and located at Higginsville, which was at that time a town of less than one hundred inhabitants.

Dr. Carter was an active member of the Lafayette County Medical Society, the Missouri Medical Association and the American Medical Association. At various times during his career he enjoyed positions of trust and distinction in these societies.

## J. J. NORWINE, M. D.

Dr. J. J. Norwine, of Popuar Bluff, died at his home in November, after a long illness. He was one of the first councilors of the Association after its reorganization, and through his untiring efforts and faithful devotion to the welfare of the organization, he organized many of the county societies now doing good work in the southeastern part of the State. He was a man of no mean ability as a physician, beloved by all who knew him, and commanded the highest respect and confidence of his fellow members in the society.

At a called meeting of the Butler County Medical Society, held at Poplar Bluff November 7, 1909, the following resolutions were passed on the death of Dr. J. J. Norwine, one of the organizers of the society, and a man who showed unusual activity in the cause of medical progress,

the organization of county medical societies, and the increase and betterment of the Missouri State Medical Society:

WHEREAS, The kind hand of Providence has seen fit to call from our society our beloved, respected, and esteemed fellow member, Dr. J. J. Norwine, therefore be it

*Resolved*, That we, the members of the Butler County Medical Society, do hereby express our sorrow and bereavement at the death of Dr. J. J. Norwine;

*Resolved*, That this society extends its sympathy to his surviving relatives;

*Resolved*, That a copy of these resolutions be given to Mrs. Norwine, to the daily press, to the Missouri State Medical Journal, and that a copy be placed on the records of the Butler County Medical Society.

A. WINDSOR, Chairman;
VICTOR CADWELL,
B. C. JONES,
*The Committee.*

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## MAY B. COLLINS, M. D.

Dr. May B. Collins, of Glasgow, Mo., died in Kansas City on November 20th, as the result of an accident. Dr. Collins was a member of the State Medical Association and of Howard County Medical Society. He graduated from the Jefferson Medical College, Philadelphia, in 1860. He was a man who stood high in the estimation of every one in his community, and commanded the respect and confidence of the people, not only as a physician, but as a Christian and a gentleman of high ideals. His life was full of good deeds, and until declining years forbade his active participation in county society work, he was a faithful attendant at all meetings. An intimate friendship with this worthy member of our profession since 1867, enables the writer to testify to the high moral and mental qualities of our deceased brother. Our profession has been bereft and his patrons have been deprived of the counsel and companionship of one who possessed the unbounded confidence of all who knew him, for he was a right physician, with a long and successful experience in the treatment of the sick and the comforting of the afflicted.

C. W. W.

# CORRESPONDENCE

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To the Editor:

The St. Louis Neurological Society at a regular meeting, November 29, 1909, passed the following resolution:

*Resolved*, That it is the sense of this society that the welfare of the sick poor under State care in Missouri would be greatly enhanced by the establishment of the merit system of selecting officers and employees in the eleemosynary institutions.

We recommend the appointment by the Governor of a civil service commission, which shall examine all applicants, thus creating an eligible list from which all officers and employees must be selected.

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Tinsley Brown, M. D.,
President Missouri State Medical Association,
Hamilton, Missouri.

Dear Doctor Brown:—

The Missouri Association for the Relief and Control of Tuberculosis has been authorized to handle for this State (outside of St. Louis) the Red Cross Christmas Stamps in the anti-tuberculosis cause, as a means of carrying on the war against that disease; and it is our desire that they shall be used as extenisvely as possible.

As you may know, this Association has, as yet, but few county branches, perhaps not more than a dozen in all, but where they exist we hope to induce them to take hold and sell the stamps to the sole advantage of their own community.

The stamps sell for one cent each, and the Red Cross people ask only twenty per cent. of the proceeds—thus leaving eighty per cent. to the sellers to meet expenses, etc., with privilege of returning those unsold.

I write for the special purpose of asking whether you would favor an appeal to the County Medical Societies to undertake this work in places where the anti-tuberculosis forces are not yet organized. If they would do this the funds thus derived would necessarily have to be expended in anti-tuberculosis work in each county, thus coöperating with us.

Kindly state your views as early as may be convenient as the stamps should be placed on sale by November 15th.

If the proposition should strike you favorably I will then ask that our correspondence be published in the Journal, and otherwise forward the undertaking in such manner as may be deemed proper.

The stamps are, of course, of no value for postage purposes, and are attached to correspondence merely as a neat means of attracting notice, and securing funds for a worthy cause.

Very truly yours,

George Homan,
President, Mo. Association for the Relief and Control of Tuberculosis.

DR. GEO. HOMAN,
St. Louis, Mo.
DEAR DOCTOR:—

I certainly approve of any move that will help to advance the worthy cause in which you are engaged. I approve the question of an appeal to the county societies throughout our State. The plan proposed in the sale of the Red Cross Christmas Stamps will work no hardship on any one who may see fit to help by the purchase, and the seller will be amply paid for the time spent in the sale of same.

Yours very truly,

TINSLEY BROWN,
President of the Missouri State Medical Association.

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November 12, 1909.

TO THE EDITOR:

At the late meeting of the Ophthalmic Section, A. M. A. (eleven hundred members), the undersigned were appointed a committee to promote *a working knowledge of simple refraction* among family physicians.

It has secured abundant evidence that such knowledge has been acquired and is now used by many physicians, so proving that all medical men can do likewise, if they so desire.

But that the practice may become uniform, it is necessary that the State Boards of Registration require it for license and medical colleges teach it in course.

Recognizing its importance, the Michigan State Board of Registration, on February 12, 1909, notified medical colleges, that thereafter, it would grant licenses to practice only to such applicants as demonstrated, on a living subject, with simple spherical lenses and test types, their working knowledge of simple refraction.

Your committee is confident, that every State Board of Registration, would make a like requirement, if it grasped the situation; and then all medical colleges would qualify their students therefor.

Recalling the fact that our system of medical education makes no adequate provision for training the family physician in simple refraction, and that it be impossible for experts to meet the needs of all the people in this respect; it is plain that this class of cases had no source of relief other than the optician. But if the State Boards require a working knowledge of simple refraction for license, the needs of all the people will be fully met by qualified physicians, and the optician resume his normal vocation as a spectacle merchant.

Assuming your vital interest in enlarging the field of family practice, your committee confidently ask your active endeavor to persuade your "State Board of Registration" to require "a working knowledge of Simple Refraction" from each applicant for license.

Each member of your committee stands ready to assist you to a

fuller understanding of the situation, or to coöperate with you in seeking its relief.

With thanks for your aid, we remain,

Sincerely yours,

LEARTUS COSMOS, Chairman;
Detroit, Mich.
A. R. BAKER,
Cleveland, Ohio.
J. SHONINGTON,
Philadelphia, Pa.

91 Lafayette Boulevard, Detroit, Michigan.

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TO THE EDITOR:

I should be very much obliged if you could insert the following item in your valued JOURNAL:

"The President of the American Gynecological Society has appointed a committee to report at the next annual meeting in Washington, on the Present Status of Obstetrical Teaching in Europe and America, and to recommend improvements in the scope and character of the teaching of obstetrics in America.

"The committee consists of the Professors of Obstetrics in Columbia University, University of Pennsylvania, Harvard, Jefferson Medical College, Johns Hopkins University, Cornell University and the University of Chicago.

"Communications from anyone interested in the subject will be gladly received by the chairman of the committee, Dr. B. C. Hirst, 1821 Spruce street, Philadelphia, Pa."

B. C. HIRST.

# COUNTY SOCIETY NOTES

## BENTON COUNTY MEDICAL SOCIETY.

The Benton County Medical Association met at Lincoln November 23d. Dr. W. G. Jones, of Lincoln, read a very interesting paper entitled, "Labor, Considered from the Standpoint of the Country Physician." This was discussed by Dr. Tinsley Brown, President of the State Association, and Drs. Rhodes, Schwald, Dillon, Stratton, Walton, Savage and Clark.

Dr. Dillon presented a clinic which was discussed by all present.

Dr. Harry Bay, of Cole Camp, was elected to membership.

Dr. Tinsley Brown gave a talk to the Society which was appreciated by all present, after which we had the election of officers for the coming year. The following were elected: Dr. N. A. Schwald, Cole Camp, president; Dr. J. H. Walton, Ionia, vice-president; Dr. Marion Dillon, Fairfield, re-elected secretary and treasurer; Dr. W. G. Jones, Lincoln, delegate to the State Association. Dr. H. G. Savage, Warsaw, alternate; Dr. Clark Fristoe, censor for three years.

The meeting adjourned to meet at the school house at 7:30 p. m., to which the public was invited and Dr. Brown, president of the State Association, gave a lecture entitled, "Problems of Public Health, Both National and State." There was a large attendance and the lecture, which was full of instructive ideas for the people, was highly appreciated by everyone who heard it. After the close of the session the doctors and their wives partook of a fine course banquet served at the Minter Hotel. —MARION DILLON, M. D., Secretary.

## CAPE GIRARDEAU COUNTY MEDICAL SOCIETY.

The Cape Girardeau County Medical Society held its regular monthly meeting at Cape Girardeau, Monday, November 11th, with the following members present: Drs. Hays, Henderson, Moore, Rosenthal, Schultz, Wichterich and Wilson.

After the transaction of the usual business, the scientific program was carried out, which consisted of the report of a case of pelvic cellulitis, by Dr. G. B. Schultz; a paper on the "Personal Experiences in Post-partum Hemorrhage and Its Treatment," by Dr. R. F. Wichterich; and a paper on "Placenta Prævia," by Dr. R. T. Henderson. Each subject elicited a good discussion. Dr. Henderson's paper will be submitted for publication in the JOURNAL.—E. H. G. WILSON, M. D., Secretary.

## CLAY COUNTY MEDICAL SOCIETY.

The regular September meeting of the Clay County Medical Society was held at the Elms Hotel, in Excelsior Springs, on September 27th.

There were present Drs. J. T. Rice, F. H. Matthews, J. H. Rothwell, J. J. Gaines, J. J. Rice, H. Rowell, W. S. Wallace, Frank Lightfoot, H. E. Nelson, Y. D. Craven, T. N. Bogart and George Musgrave.

An extremely interesting and instructive paper on "Rheumatism, Uric Acid and Nitrogen Poisoning," was read by Dr. J. J. Gaines and freely discussed by all present.

Dr. Frank Lightfoot reported two cases of retained placenta.

Dr. T. N. Bogart reported several cases of nephritis with unusual clinical manifestations.

Dr. W. S. Wallace reported a case of neuritis.—F. H. MATTHEWS, M. D., Secretary.

MEETING OF OCTOBER 25TH.

The regular October meeting of the Clay County Medical Society was held at the office of the secretary in Liberty, on October 25th, with the following named physicians present: Drs. J. T. Rice, F. H. Matthews, J. M. Allen, E. H. Miller, J. H. Rothwell, W. H. Goodson, R. E. Sevier, W. N. Cuthbertson, J. J. Rice, C. H. Suddarth, Bert Maltby, G. J. Musgrave and R. E. Ward.

Drs. George J. Musgrave and Hugo E. Nelson, of Excelsior Springs, were elected members.

Papers were presented by Dr. J. J. Rice on "Phlebitis" and Dr. E. H. Miller on "The Significance of Abdominal Pain." Both essays were of a high order and brought forth vigorous discussions.

A case of infantile paralysis was reported by Dr. Miller, and a case of hematuria by Dr. R. E. Sevier. Dr. Matthews reported a case of spina bifida.

A resolution was adopted to the effect that this society insist upon the prosecuting attorney of Clay County proceeding against all violators of the Medical Practice Act, and that the resolution be sent, with the names of all illegal practitioners, to each physician in the county.—F. H. MATTHEWS, M. D., Secretary.

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## HENRY COUNTY MEDICAL SOCIETY.

Henry County Medical Society met on Wednesday, October 20th, 1909, with the following present: Drs. Gibbins, McNees, Miller, Neeley, Haire and Douglass.

Dr. R. D. Haire read a paper on Serum Therapy, giving a short history of investigation and ideas that lead up to the manufacture, and the method of preparation, of the serums. He also gave the theory of the toxic and antitoxic battle that was going on at all times in the human system, and how these serums, by aiding the phagocytes to eat up the bacilli of disease, helped nature to effect a cure. He described the manner of using the serum and the doses required.

The paper was discussed by all present and the writer complimented on its good quality, and the many good thoughts evolved.

Dr. J. E. Neeley reported a case of typhoid fever, with complications of some interest.

MEETING OF WEDNESDAY, NOVEMBER 17.

Dr. E. C. Peelor reported cases of autointoxication and his method of treatment.

Dr. W. H. Gibbins spoke of typhoid fever, his treatment and the results.

Dr. A. J. McNees gave his views on the therapeutic use of and the quality of salicylate of soda (*Merrells*), urotropin and other remedies.

Dr. Gibbins then gave a short history of the last hours of Dr. Jno. H. Britts, the courage and fortitude shown by the doctor in discussing his symptoms, foretelling the outcome to the last moment, yet retaining a cheerful mental poise.

The following resolution was introduced and passed:

Death hath again entered our ranks, therefore we wish to give this testimonial of our high esteem and most respectful regard for our comrade, Dr. John H. Britts, who, during life, at all times was a devoted student of his profession, and a kind, considerate and helpful practitioner. His loss to all the people intensifies the loss we suffer in missing his counsel, his help and kind actions to us. We give our sympathy to his family whose bereavement is the greatest, and the public who will miss him in many ways. His precepts and example we can emulate. His work and many talks in our society meetings we can memorize to our advantage.—F. M. Douglass, M. D., Secretary and Reporter.

## HOWARD COUNTY MEDICAL SOCIETY.

The Howard County Medical Society met at 2 p. m., Friday, November 5, 1909. Those present were: Drs. Joel Y. Hume, Richards, Bonham, Kitchen, Megee, Wright, Lewis, Thompson, Moore and Watts.

There were no clinical cases reported or papers read.

Resolutions regarding the death of Mrs. Emma G. Moore, wife of Dr. A. W. Moore, were adopted and ordered spread on the record book.

The following officers were elected for 1910: Dr. W. B. Kitchen, Glasgow, president; Drs. T. C. Richards and J. Y. Hume, first and second vice-presidents; Dr. C. W. Watts, secretary and treasurer; J. Y. Hume, member of House of Delegates; Drs. Lewis, Moore and Bonham, censors; also a committee of one from each town in Howard County to look after chiropractics.—C. W. Watts, M. D., Reporter.

## MISSISSIPPI COUNTY MEDICAL SOCIETY.

The Mississippi County Medical Society met in regular session at Charleston, on September 6th. Present: Drs. Lynch, Boone, Reid, Chapman and Howle, of Charleston; Drs. Wallace and Love, of Bertrand. Visiting physicians: Drs. Marshall and Vernon, of Charleston.

On report of the membership committee, Dr. John C. Boone was elected a member. The membership committee asked for more time to consider the application of another applicant, which was granted.

A communication was read from the editor of the Journal.

A number of cases from practice were reported, and interesting discussion of the conditions followed each report. Dr. Reid reported a case of typhoid fever, which had begun with indications of malarial fever and the patient apparently was convalescing from this attack, but some two weeks after malaria had been under control, symptoms of typhoid fever presented, the temperature ranging from 102 to 103.4. He made a smear which was sent to Dr. McConnell, bacteriologist to the State Board of Health, who reported the Widal test negative. Dr.

Reid, however, clung to the opinion that the condition was typhoidal, since the symptoms observed in the course of the treatment excluded every other condition except typhoid fever. Dr. Reid reported several other atypical cases of fever, some of which gave a positive Widal reaction.

In the discussion of the paper, Dr. Reid was asked what symptoms he would consider indicative to justify the diagnosis of typhoid without the assistance of a blood examination. Dr. Reid said he could refer to text-books and then make a more complete picture.

Dr. Boone gave the prominent symptoms seen clinically in typhoid and said that he would treat such a case as one of typhoid fever, even though the Widal test—which in his opinion was not as reliable as we could wish it to be—failed to establish the diagnosis. Dr. Chapman said that a case of fever which resisted quinine for several days, should be suspected of being typhoid. Dr. Reid mentioned another case which had been treated as typhoid fever for several weeks, but upon examination of the sputum, it was discovered that the patient was afflicted with tuberculosis. Dr. Howle asked for a report of a case of typhoid in a patient over forty years old, and asked if any of the doctors present had ever seen typhoid in a person over forty years of age. Dr. Howle said that Dr. T. S. Bell, a noted physician of Louisville, and a teacher in the university in that town, had taught his pupils, in the sixties and seventies that people over forty years old were immune to typhoid, because of the belief that after this period there were no Peyer's patches, Peyer's glands being the seat of the infection. Dr. Boone mentioned a case in which the patient had four successive attacks of typhoid, the last attack when thirty-five years old. Dr. Chapman reported that he had seen typhoid fever without a rise of temperature, in fact, the temperature was subnormal. Dr. Marshall reported a case that presented symptoms of a mixed infection of typhoid fever and tuberculosis. Dr. Lynch reported a case which he had diagnosed as typhoid on the second day after beginning treatment.

Dr. Boone promised to read a paper at the next meeting on the subject of "Benefits of Urinary Analysis."

### MEETING OF OCTOBER 4TH.

At this meeting the following members were present: Drs. Wallace and Love, of Bertrand; Drs. Boone, Chapman, Howle and Reid, of Charleston; visiting physician, Dr. Vernon, of Charleston.

The secretary read a communication from the editor of the JOURNAL.

Dr. Boone read a paper on "Benefits of Urinary Analysis," in which he showed the advantages to the general practitioner coming from a routine procedure of this kind. The paper was well received, and the doctor highly complimented upon the manner in which it was prepared.

In the discussion of the paper Dr. Chapman said that urea, according to his understanding, was not a product of the liver solely, but was found in the muscles and elsewhere throughout the body. He considered it the duty of every physician to have a knowledge of the use of the microscope and to study the excretions and secretions. A study of the products of the economy, he believed, would often furnish a clue to the diagnosis of many maladies. Dr. Wallace asked how urea showed symptoms of being the cause of disease. Dr. Howle asked if Dr. Chapman was an orthodox in his belief as to the so-called uric acid diathesis. Dr. Chapman replied by saying that lumbago, muscular rheumatism,

shooting pains, and such like symptoms, were relieved by active elimination. Dr. Howle wanted to know whether urea could be considered as having any influence in causing puerperal convulsions. To this question the members gave a negative answer, but Dr. Howle said he was not yet convinced.

Dr. Chapman reported a case of cerebral lesion in a man of 52 years of age. The patient was unable, after exercising to any extent, to articulate certain words, could not write or make calculations correctly, not even add simple numbers, although when in normal condition he was an expert accountant and bookkeeper. He knew when words were rightly pronounced, but could not himself pronounce and spell them. Reflexes were normal, and there were no symptoms of ataxia.

The report was fully discussed by the members, Drs. Boone and Vernon being of the opinion that the condition was of syphilitic origin. Dr. Chapman thought a thrombosis might be the cause, with perhaps a slight hemorrhage. He stated that the case was improving under mercurials and the iodides. Dr. Vernon considered the prognosis unfavorable, but Dr. Brown thought large doses of the iodides would relieve the condition.

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# BOOK REVIEWS

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A Treatise on Diseases of the Nose, Throat and Ear. By William Lincoln Ballenger, M. D., Professor of Laryngology, Rhinology and Otology in the College of Physicians and Surgeons, Chicago. New (2d) edition, thoroughly revised. Octavo, 930 pages, with 491 engravings, mostly original, and 17 colored plates. Cloth, $5.50 net. Lea & Febiger, Philadelphia and New York, 1909.

No better proof of the excellency of this volume could be advanced than the fact that within one year a large first edition has been completely exhausted. This, the second, edition presents a very thorough revision of the work.

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Surgery, Its Principles and Practice. By various authors. Edited by William Williams Keen, M. D., L.L. D., Emeritus Professor of the Principles of Surgery, Jefferson Medical College, Philadelphia; and John Chalmers DaCosta, M. D., Professor of Surgery, Jefferson Medical College, Philadelphia. Volume IV. with 582 illustrations, 22 of them in color. Philadelphia and London, W. B. Saunders Company, 1908. Per volume, cloth, $7.00, net.

This fourth volume in every respect is up to the excellence of the three preceding ones. The careful and appropriate selection of authors for each subject is well exemplified in this volume. It contains monographs, among many others, by Coley, on Hernia; by Cabot, on Vesical Stone; by Young, on the Prostate; by Murphy, on the Appendix. A chapter on Surgery of the Bladder is written by Dr. Bransford Lewis, of St. Louis. The chapters dealing with Military and Naval Surgery are

contributed by the Surgeons General of the respective U. S. Departments. There are most important contributions on the question of Tropical Surgery and on the "Influence of Race, Sex and Age in Surgical Affections." One more volume will complete this monumental work which truthfully depicts the present status of surgery as understood and practiced by the most eminent specialists of the world.

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The Practitioners' Visiting List for 1910. A valuable pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Price by mail, postpaid to any address, $1.25. Thumb-letter index, 25 cents extra. Lea & Febiger, Publishers, Philadelphia and New York.

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The Medical Record Visiting List. Wm. Wood & Co., 51 Fifth Ave., New York, N. Y.

This Visiting List is in all respects a suitable pocket record of the daily work of the physician. It is fully up to the standard of previous Medical Record Visiting Lists. It is issued in volumes of thirty and sixty patients a week.

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The Physician's Visiting List for 1910. Philadelphia, P. Blakiston's Son & Co., 1909.

The Visiting List issued by Blakiston is now in its 59th year. It contains all the good features of previous issues and the usual tables of reference. The various editions contain space for from twenty-five to 100 patients a week or month.

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The Psychic Treatment of Nervous Disorders. By Dr. Paul Dubois, Professor of Neuropathology at the University of Berne. Translated and edited by Smith Ely Jelliffe, M. D., and William A. White, M. D. Sixth Edition. Revised. Funk & Wagnalls Company, New York and London. 1909. Price, $3.00, net.

This book has become a classic and the appearance of a sixth edition best proves its popularity both among physicians and the lay public.

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The Annals of Surgery issues its fiftieth volume. On January 1st, 1885, there appeared in the literary medical world the first number of a new journal, given up entirely to general surgery. This radical departure from the old lines had the full endorsement of a large number of the leaders in surgery, both in Great Britain and the United States, among whom was Lord Lister, whose name led all the rest on the title-page. The seed was good, the soil fertile, and the journal grew and prospered. To-day its the Annals of Surgery of Philadelphia. In December its subscribers will be treated to a choice collection of twenty-two original articles in the form of a jubilee number. Eminent surgeons from England, Scotland, Denmark, France, Italy.

# ARTICLES APPROVED BY THE COUNCIL ON PHARMACY AND CHEMISTRY.

## SUPRARENAL ALKALOID.

The active alkaloid of the suprarenal (epirenal or adrenal) glands.

Actions and Uses.—Suprarenal alkaloid acts peripherally on a variety of structures, probably by stimulating the sympathetic nerve endings. Its most important therapeutic actions consist in a constriction of the blood vessels, with consequent high rise of blood pressure; a stimulation of the vagus center with slowing of the heart, and a direct stimulant to digitalis. Large doses also cause glycosuria; continued administration of large doses leads to atheroma. The effect of a single dose is very fleeting. It is not irritant. The effects are seen on local application and intravenous and intramuscular injection. When given to animals, by mouth or hypodermically, moderate doses have almost no action. Dilute water solutions rapidly lose their strength, the deterioration being accompanied by a reddish or brownish discoloration. The alkaloid is used mainly locally for its vasoconstrictor action, in hemorrhage, and in catarrhal and congestive conditions. It is said to cut short the asthmatic paroxysm (being used by spraying the larynx and by hypodermic injections). Intravenous injections are effective in shock and anesthesia accidents (care being taken not to give an overdose). It has also been recommended in heart disease, Addison's disease, etc., but opinions are divided as to the benefits to be expected from oral administration.

## TANNIGEN.

Tannigen, $C_{14}H_8(C_2H_3O)_2O_9=C_{18}H_{14}O_{11}$, is the acetic acid ester of tannin.

Actions and Uses.—Tannigen passes unchanged into the intestine, where it becomes effective as an astringent in contact with the alkaline juice. It is said to be free from irritant action. It is recommended in acute diarrhea affections, such as acute intestinal catarrhs, cholera morbus, cholera infantum and dysentery; it has also been used with reported success for the diarrhea of typhoid fever and intestinal tuberculosis. Dosage.—0.2 to 0.7 Gm. (3 to 10 grains) four times per day, dry on the tongue followed by a swallow of water; or mixed with food, avoiding warm or alkaline liquids. Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

## TANNALBIN.

Tannalbin is a compound of tannic acid and albumin thoroughly exsiccated.

Actions and Uses.—Tannalbin is astringent. Being insoluble in the gastric juice, it becomes effective when it reaches the intestines, where it slowly splits off tannic acid. It does not produce gastric disturbance. It is recommended in diarrhea, especially in that of children, and in phthisis. Dosage.—1 to 4 Gm. (50 to 60 grains) in powder (or tablets) followed by water; infant doses, 0.3 to 0.5 Gm. (5 to 8 grains) in gruel or other mucilagious liquid. Manufactured by Knoll & Co., Ludwigshafen a. R. and New York.

## TANNOFORM.

Tannoform, $CH_2(C_{14}H_9O_9)_3=C_{29}H_{20}O_{18}$, is a condensation product of formaldehyde with gallo-tannic acid.

Actions and Uses.—Tannoform is astringent and antiseptic. It is recommended on account of these properties in chronic intestinal catarrh and externally in hyperidrosis, bromidrosis, weeping eczema, ozena, etc. Dosage.—0.25 to 0.5 Gm. (4 to 8 grains); externally, pure or in 25 to 50 per cent. triturations (with talc) as dusting powder or as 10 per cent. ointment or soap. Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

## TANNOPIN.

Tannopin, $(C_{14}H_{10}O_9)_3.(CH_2)_6N_4=C_{48}H_{42}O_{27}N_4$, is a condensation product of tannin with hexamethylenamine.

Actions and Uses.—Tannopin is an intestinal astringent and antiseptic; it passes unchanged through the stomach, but, being gradually decomposed by alkalies, it becomes effective in the intestinal tract, exerting the action of its two components. Dosage.—0.3 to 0.5 Gm. (5 to 8 grains) for infants and children; 1 Gm. (15 grains) for adults, dry on the tongue, followed by a swallow of water, or sprinkled on food, four times a day. Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

## THEOBROMINE.

Theobromine, $\begin{matrix} N(CH_3).CH:C.N.(CH_3)\diagdown \\ | \qquad\quad | \qquad\quad | \\ CO\text{———}NH.C=N\diagup \end{matrix}$ $CO=C_7H_8O_2N_4$, is a base occurring in *Theobroma cacao, Kola acuminata*, etc., and also made synthetically.

Actions and Uses.—Its uses are similar to caffeine, but it has relatively greater diuretic, cardiac and muscular activity. It does not act so powerfully on the central nervous system. It is recommended as a diuretic. The great obstacle to its use has been its insolubility and the consequent uncertainty of the degree of its absorption. It is liable to produce gastric disturbances. Dosage.—0.35 to 0.5 Gm. (5 to 8 grains).

## THEOBROMINE SODIUM SALICYLATE.

Theobromine sodium salicylate, $NaC_7H_7N_4O_2+NaC_7H_5O_3$, is a double salt of theobromine-sodium and sodium salicylate.

Actions and Uses.—Its effects are the same as those of theobromine (which see), over which it has the advantage of greater solubility. Dosage.—1 Gm. (15 grains) five or six times a day. Its tendency to produce gastric irritation may be prevented by giving it in well-diluted solution, or, if preferred, in capsules or wafers, followed by water.

## THEOPHYLLIN.

Theophyllin, $\begin{matrix} N(CH_3).CO.C.NH. \\ | \qquad\quad || \qquad\quad \\ CO.N(CH_3).C.N: \end{matrix}$ $CH=C_7H_8C_2N_4$,

is an organic base isomeric with theobromine; it is found in small amounts in tea, and is also made synthetically.

Actions and Uses.—Theophyllin is a powerful diuretic, claimed to surpass all other remedies of this kind, increasing not only the amount of liquid, but the solids in the urine as well, the secretion of urine being sometimes very copious. The diuretic effect, however, is not prolonged, and its administration is, therefore, advantageously followed by one of the theobromine derivatives having a weaker, but more persistent, action. It occasionally produces gastric disturbances, and renal irritation has also been reported. It is claimed that these may be obviated by the use of acettheocin-sodium (which see) instead. It is recommended in cardiac affections, nephritis, dropsy, etc. Dosage.—0.2 to 0.35 Gm. (3 to 5 grains) in warm tea.

## THIOCOL.

Thiocol, $C_6H_3(OH)\ (OCH_3)\ (KSO_3)\ 1:2:6=C_7H_7O_5KS$, is the potassium salt of ortho-guaiacol sulphonic acid.

Actions and Uses.—Thiocol is said to be non-irritating to the mucous membranes of the digestive tract, readily absorbed and is claimed to promote appetite and improve nutrition. It is recommended in pulmonary tuberculosis, acute and chronic bronchitis, pneumonia, whooping cough, emphysema of the lungs, etc., as a means of relieving expectoration, diminishing night sweats and improving nutrition. Dosage.—0.3 to 1.3 Gm. (5 to 20 grains), in solution with orange syrup or in tablets. Manufactured by F. Hoffmann-LaRoche & Cie, Basel, Switzerland (The Hoffmann-LaRoche Chemical Works, New York).